

Two New U.S.H.A. Housing Projects in Louisville, Ky., Show Continued Reliance on Durable Lead Plumbing

THE East End and West End low rent U.S.H.A. housing projects in Louisville, Ky., are two more projects showing the continued reliance placed on lead plumbing in U. S. H. A. construction.

Together, these projects consist of 117 buildings with 1,594 apartments. All soil and waste pipe in these projects is cast iron and lead and all sinks, laundry tubs, water closets, lavatories and bath tubs waste through lead connections. All roof flashings are made of sheet lead and all joints in cast-iron soil, waste, and sewer pipe are calked with lead. Lead-calked joints are also used for the 6-in. cast-iron water mains serving the buildings. In all, 1,619 extra-heavy 4-in. lead bends, 1,702 extra-heavy lead P-traps, over 10,000 lb. of lead pipe, 242,000 lb. of calking lead and approximately 30,000 lb. of sheet lead were used. To insure highest quality lead products, all lead pipe, traps, bends, and calking lead was duly stamped with the Lead Industries' Seal of Approval.

General view of the East End housing project, Louisville, Ky., where lead plumbing has proved once more its economy and advantage in U.S.H.A. projects



The standard principles of lead working were employed on these jobs



which, in this and other projects, have meant the saving of time and expense. The lead work was wiped up on a

bench set up in a temporary shop on the premises and merely calked in place. Members of Local 107, in Louisville, fabricated the lead work.

It is only logical that lead work should save money. With lead, whole frames of wastes and vents may be wiped together on a bench by men especially assigned to that job. The frames may then be taken by others and calked into place. This saves many steps and time, coordinates the work, and provides greater efficiency. Other plumbing systems cannot be so installed, nor do they give the durability and efficiency of lead plumbing. Easy sweep bends and the smooth inner bore of both lead pipe and wiped joints provide free flow and avoid clogging.

Both projects were designed by the Allied Architects of the Louisville Municipal Housing Commission. Warren and Ronald were the engineers.

The P. H. Meyer Plumbing and Heating Co. was the plumbing contractor for the East End project. Geo. H. Rommel and the Whittenburg Construction Co. were the general contractors. William Paul was plumbing superintendent. All are of Louisville.

Koenig Brothers were the plumbing contractors for the West End project. The Struck Construction Co. was the general contractor. Nicholas Herbst was plumbing superintendent.



Temporary shop pictures showing supplies of lead pipe, fittings and sheet lead for the Louisville projects, and plumbers wiping up lead work to be installed

PHOTOS BY
ROYAL PHOTO CO.

Pure White Lead and Oil Paint Decorates and Protects Niagara Falls Shredded Wheat Plant

BY using pure white lead and oil paint, mixed on the job, the recent painting of all trim and sash for the Shredded Wheat plant of the National Biscuit Company, at Niagara Falls, N. Y., is an excellent example of judicious plant maintenance and upkeep. Constructed in 1904, the plant building is noted for having probably the largest wood windows in existence. Naturally, painting forms an item of importance.

Until the Shredded Wheat Company was absorbed into the National Biscuit Company several years ago, this building was painted by the plant maintenance crew with various types of materials. The short-lived paint jobs necessitated frequent repainting and maintenance service. When the National Biscuit Company recently decided to repaint the sash, frames, and sills they were found to be in such condition that burning off the old paint was necessary before repainting. This was done and the parts painted with three coats of pure white lead and linseed oil, mixed on the job, as recommended by the painting contractor and approved by the National Biscuit Company. A total of approximately three tons of white lead was necessary for the job.

Painting performs many functions of which protection of the surface.



General view of the large Niagara Falls plant of National Biscuit Company. White lead proves highly economical for such industrial paint maintenance

decoration and appearance are the most important. Also, a well painted exterior reacts favorably through its orderly, pleasing and cleanly appearance on both the occupants of the building and on passers-by. That the advertising value and prestige gained through painting is a factor to be strongly considered is evidenced by the trend toward distinctive and uniform exteriors by many of our larger national business concerns. Another factor not often thought of is the increased interior light resultant from painting trim and sash in light colors.

Painting is a necessity. When properly done, it becomes a benefit and good investment, the worth of which is

determined by the effectiveness of the results and the cost incurred. In this respect, it is the yearly cost and not the initial cost that is the most important factor. It may be possible by the use of poor quality materials, or by skimping on corollary work, to reduce the initial cost. This apparent saving, however, is just that—an apparent saving. Such practices will lead to costly surface preparation and maintenance and a high annual painting expenditure. Actually, the use of only time-tested materials and efficient workmanship will not increase the initial cost of the work by more than a small fraction, but it will increase the total life of the job considerably. In

At left, burning off the old paint on the Shredded Wheat Plant trim. Such costly surface preparation is avoided when, as at right, pure white lead and oil is used. White lead leaves a surface in good condition for repainting

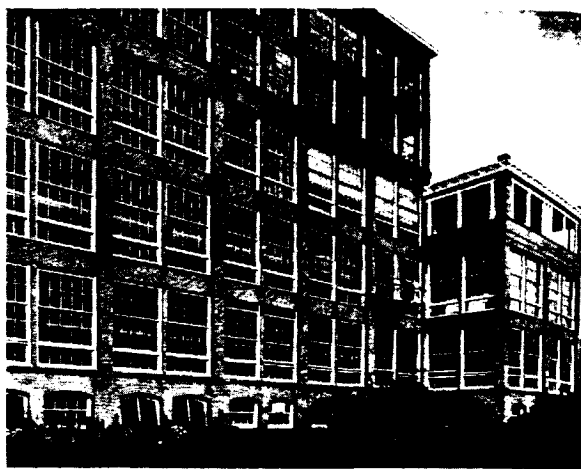
PHOTOS BY HAUSER BOB



addition to this, a truly quality job produces further dividends by minimizing maintenance and reducing surface preparation.

In short, the basic problem that faces every industrial buyer of painting, whether through a contractor or through his own internal maintenance organization, is to obtain the most for his painting dollar. With white lead the painting of all commonly used surfaces can be standardized, since white lead is highly effective on wood, brick, stone or other surfaces. By the use of reliable and experienced contractors, the buyer assures himself that the material used will render its maximum service, and be applied by skilled mechanics who know their business.

Painting the tremendous wood windows for the plant consumed over 3 tons of pure white lead in oil



Oliver B. Cannon & Son, painting specialists, of Philadelphia, were the

contractors for the painting work at the Niagara Falls plant.

Lead Condenser Tubes Extruded in Various Shapes

THE successful extrusion of lead tubes in forms other than round has been reported in connection with the development and manufacture by the Western Electric Company of condensers with highly improved casings. Although the extrusion of lead tubes is not at all new, the process has been generally limited to round tubes, and it is felt that the development of oval and rectangular extruded tubes may easily suggest many interesting applications.

Prior to the new method, condenser cans were made by folding up a flat blank of tin plate and soldering three of the bottom edges and a side seam.

Under the new process the extruded lead can is seamless and tight and, although slightly higher in cost than a machine made soldered can, is superior from an engineering standpoint because it is absolutely moisture-proof.

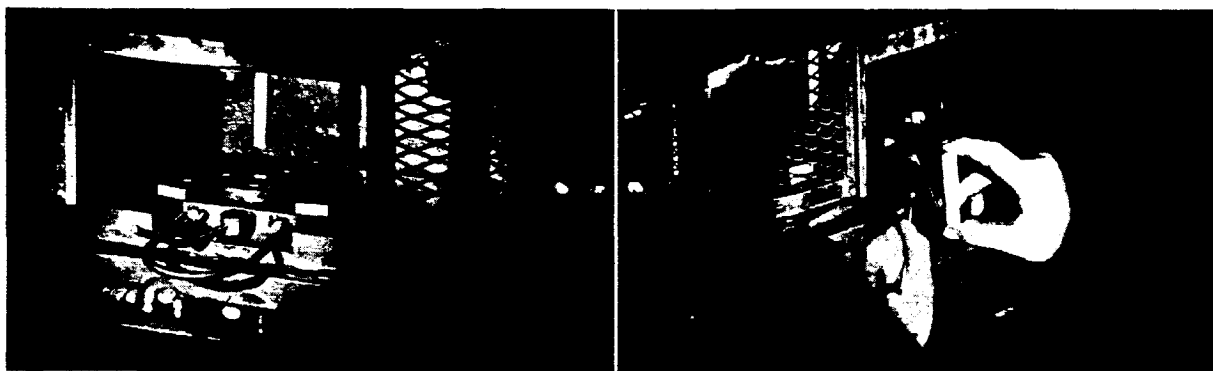
The usual impact method of extrusion is used in their manufacture. A blank disc or slug of pure lead is placed in the cavity of a die, the depth of the die being somewhat larger than the thickness of the slug. Then a punch shaped like the die, only smaller all around by the desired thickness of the tube, is forced onto the disc. This causes the lead to flow

under pressure up and around the sides of the punch. Air pressure or mechanical fingers then remove the tube from the punch.

When round cans are extruded there has been no difficulty in obtaining uniform wall thickness. However, with irregularly shaped tubes it was found that the flow from the center of the slug to the outer periphery was not uniform. Production of a specially designed tool, adjusted by liner-pins, has obviated this difficulty and the successful extrusion of rectangular or other shaped lead tubes facilitated and made practical, opening new fields of usefulness.

Two views of the extrusion process for manufacturing lead condenser tubes in forms other than round

COURTESY BELL TELEPHONE LABORATORIES



Historic Betsy Ross Home Decorated with White Lead



At left, the restored Betsy Ross Flag Room painted with pure white lead and oil and at right, a general view of the historic shrine
K. F. LUTZ



THE story of Betsy Ross and the creation of the American Flag is well known. Not so well known, however, is the small brick house at 239 Arch Street, Philadelphia, where for many years Betsy Ross lived and had her flag shop.

Although built about 1700, the Betsy Ross home was, fortunately, little damaged when the Betsy Ross Memorial Association started its program to save this landmark. A generous gift by A. Atwater Kent early in 1937 made complete restoration possible under the direction of Brognard R. Okie, architect.

Every effort was made to save the original woodwork and hardware and, in redecorating the interiors and exterior, careful attention was paid to colonial practice and the house styling duplicated as closely as possible.

Four coats of pure white lead and oil were applied to the exterior woodwork. Interior walls are plaster painted with three coats of white lead. For the inside trim two under coats of white lead and oil, flat finish, were applied to form a permanent and elastic base for the enamel finish coat.

No effort was spared to give the maximum protection to the 240-year-old woodwork and, following the practice of generations and many other restorations of famous shrines, pure white lead paint was chosen as the ideal medium to preserve and enhance the beauty of both interior and exterior surfaces. The toughness, durability, and economical service of white lead has been proved by long years of experience.

Since this memorial is visited by many thousands of people each year the paint on the wall surfaces is subject to considerable dirtying and finger marks. The washability of the white lead, however, makes it possible for these surfaces to be thoroughly cleaned by plain soap and water without damage to the life or appearance of the paint.

Brognard R. Okie, architect in

charge of the restoration, has contributed an invaluable service to the memorial history of this country. Unkefer Brothers Construction Company was the general contractor, and the painting contractor was Norman R. MacGregor and Son. All are of Philadelphia. Vexil Weisgerber is manager of the house.

Band Instruments Shaped with Lead

A SIMPLE but unique application of lead is its use in bending musical instruments by the York Band Instrument Company, Grand Rapids, Michigan.

For many years bending has been accomplished by filling the straight lengths of instrument tubing with hot lead. This facilitates the bending operation and eliminates sharp crinkles. The tubing is bent to the desired shape, and small wrinkles are rubbed and hammered out. The lead inside

is soft and will not damage the tubing, yet acts as a background against which the hammering may be done. When the bend is thus completed the lead is merely melted out and the instrument buffed and polished.

In this way band instruments are easily and economically bent to any desired form or shape with assurance of uniform diameter, a process that might easily lend itself to other industries and applications in many different fields.

Bending band instruments with the aid of lead, poured into the tubing



Hard Lead Flashing in Constructing Home

UNUSUAL ATTENTION PAINTING

THE ease with which hard lead flashing meets the waterproofing problems incident to the construction of small homes of modern design is demonstrated by a recently completed home in North Stamford, Conn. Moreover, in addition to lead flashing, durable lead plumbing is employed, and all interior and exterior painting is done with pure white lead and oil. The home is in the \$8,000 to \$10,000 class.

In past years, flashing on small homes has generally consisted of simple and standard applications such as valleys and window and door heads. However, flat decks, corner windows, and the other devices of the modern-styled home demand careful flashing attention.

In this home the roof slopes only about 10 deg. Overhanging the side walls about 3 ft., it is sheathed with plywood and covered with built-up asphalt roofing. A sheet-lead slag stop is used around the outside edge of the roof to retain the slag and act as a flashing to cover the joint between the roof sheathing and the fascia board. In installing a slag stop the fascia board should be brought up above the roof sheathing about $\frac{1}{2}$ in. and beveled, or a cant strip should be nailed to the top of the roof edge. A thin continuous lead cleat is then nailed to the fascia and locked to the lead slag stop. This is brought up the fascia, over the cant strip and back onto the roof slope about 5 or 6 in. under the top layer of built-up roofing. The strips are laid in 8-ft. lengths loose-locked together and to the supporting cleat.

On the underside of the roof the overhanging rafters are finished with plywood painted with white lead. Where the plywood intersects the vertical side walls the joint is sealed against wind and moisture with lead flashing. The lead is laid in 3-ft. lengths, extending out about 6 in. be-



Above left, view of the sheet-lead slag stop around the roof edge, and right, a close-up of the lead stop on the fascia



Above left, the under eave flashing and, right, flashing vertical corners with hard lead. Below, a corner window with lead sill pan, and, at right, the lead flashing formed around the base of the corner angle-iron



shingling Many Problems g Home of Modern Design

PAID FLASHING NEW SMALL HOME

tween the overhang of the rafters and the plywood, and down the exterior walls behind the top shingle course.

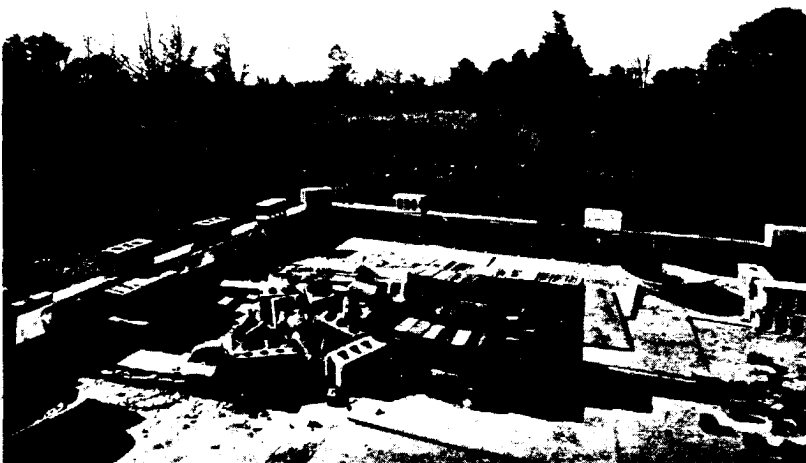
At the vertical corners of the house the building paper, which was to have been used to waterproof the corners, cracked and split on the job. For permanent protection, therefore, it was replaced with lead soaker flashings interwoven with the shingle courses in the same way as closed valley and sidewall flashing.

Lead window-head flashings were used over all windows, both wood and steel, as well as lead sill pans under the window sills and roof deck doors. The sill flashing, in one case, presents an interesting example of the workability of lead. It was necessary to set a corner casement window in two sections using a steel angle iron as the structural corner member for fastening the casements. The angle iron, however, had a square base which rested on the framing and extended inside about 4 in. further than the bottoms of the casements. This interfered with the lead sill pan but was easily taken care of by notching the pan at the corner and soldering in a separate piece of lead which sheathes the angle-iron base. Thus the entire casement is watertight.

A flat deck with a parapet wall, 12 in. thick, is used over the garage. The parapet through-wall flashing extends down on the inside of the wall about 4 in. and on the outside down 1 in. to form a drip. No greater than 8-ft. lengths were installed, loose-locked together and coated with asphaltum. A cement cap on top of the lead through-wall flashing finishes off the parapet.

Where the deck intersects the vertical walls of the house, base and cover flashings are installed in the usual manner, extending out onto the deck about 6 in. and up behind the first shingle course. These are in 8-ft. loose-locked sheets.

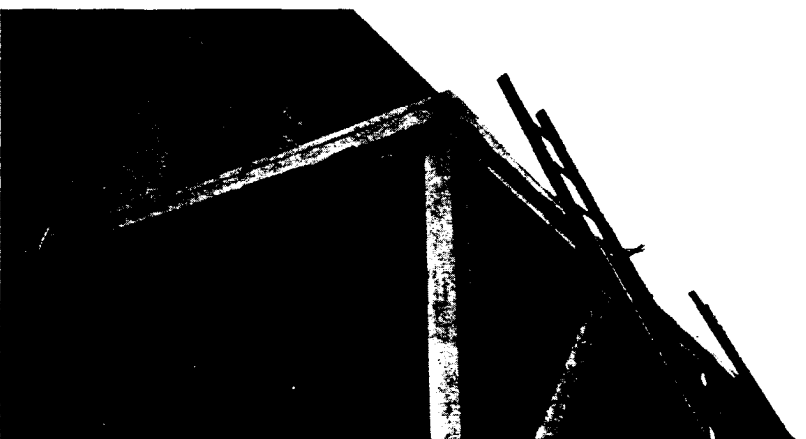
An inside leader drains the roof



View of parapet through-wall flashing installed, before coating with asphaltum and before setting coping. It is in 8 ft. lengths with unsoldered overlapped joints between sections. Exposed loose edges of lead flashing should be hemmed under about 1/2 in. to provide added rigidity



Above left, lead chimney flashing is installed in the usual manner. The lead slag stop can just be seen at the left where it dies into the chimney flashing. Above right, erecting the chimney. The joint between the brick chimney and shingled wall is flashed with strips of lead, installed in short sections and overlapped. Below, the lead flashing and fascia band for the composition deck



deck and was specified as a box drain. A short piece of plywood is nailed between two garage roof beams forming a box. This is lined with sheet lead soldered at the bottom to an extension piece of lead pipe which is calked into the leader. The top of the box, at the roof deck level, is soldered to a lead flashing for the roof drain. The flashing extends out about 1 ft. on all sides of the drain, and on the sides near the parapet, forms a base flashing. The box method has the advantage over a plain roof drain in that it provides more drainage space for the roof and helps to prevent stoppage. Around the roof drain the lead flashing is crimped to form a gravel stop.

A second roof deck is covered with

a composition deck material laid in small squares. At the walls it is flashed with base and cover flashing. On the outside, lead strips are run under the deck material and down behind the fascia board about half way. Here they are brought through the fascia and provide an attractive band around the bottom of the fascia as well as flashing protection.

The joint between the chimney and the vertical walls is flashed with 8-ft. sheets of lead, overlapped, built into the brickwork and brought out behind the shingles. Chimney flashing, vent-pipe flashing and other simple flashings were installed in accordance with general practice. Except for the parapet-wall flashing, which was 3-lb. hard

sheet lead, all flashings were 2½-lb. hard sheet lead.

Very simply and economically, at cost competitive with other materials, hard lead flashing overcomes the several problems found in this type of construction as well as in ordinary flashing. Moreover, with lead there is no danger of staining on siding or other materials. Furthermore, since hard sheet lead is a homogeneous material all the way through, and not just a coating, there is the added protection of thickness, double guarantee of durability and trouble-free service.

George C. O'Neill was the sheet metal contractor for this home, and Joseph LiVolsi the general contractor. Both are of Stamford, Conn.

A Quarter-Century Life for a White Lead Paint Job

STRIKING examples of the gradual even wear of white lead may be found in a study of the old houses of New England. One of the most interesting of these cases is the old Manse in Concord, Mass. Constructed in 1769 by the Rev. Wm. Emerson, grandfather of the essayist, this house remains today as a memorial to early New England architecture.

When recently seen, the paint on this house seemed to have been neglected for a long time, and information received was that it had not been painted since 1915. Close examination revealed that, although not painted for 25 years, a layer of paint was still clinging firmly to the wood. The paint previously used had worn down from the surface by gradual even wear, without cracking.



Further information given was that the last painting, in 1915, was done with pure white lead and oil, and this is borne out by the manner of wear typical of pure white lead paint. The old Manse provides an outstanding example of the durability and excellent characteristics of lead and oil. After 25 years of exposure to severe New England weather, this house still shows a tenacious film of white lead adhering to the wood surface in excellent condition for repainting.

A study of the house reveals an interesting type of construction peculiar to the early American period. The clapboards on the side walls are lap-jointed rather than butt jointed as is common practice today. The ends of each clapboard were beveled to a feather edge and matched to each other. With this arrangement, a single nail driven through the center of the joint grips both adjoining boards. An examination of the close-up photograph illustrates how this was done. It will be noticed that all these joints are held with large hand wrought nails. No sign of disintegration or rusting of these nails could be seen.

No home or building owner expects

The old Manse, Concord, Mass., erected in 1769 and last painted a quarter century ago with pure white lead and oil. Note in the close-up the excellent condition of the surface for repainting

to allow a quarter of a century to pass between paint jobs. But it sometimes is unavoidable to allow unusually long periods between paintings, and if this does happen to a pure white lead job, one may be sure that the paint will grow old gracefully and be ready for a repaint job at any time. There is no cracked and scaling paint to be removed by expensive burning and scraping. The following is from Consumers' Guide, published by the United States Department of Agriculture: "When worn out, a coating consisting wholly of white lead, on woods that hold paint well, will still go through a long period of neglect during which it looks shabby but not unkempt. After such neglect, a white lead surface can easily be repainted without undue expense."



Ready-to-Use Pure White Lead Paint Now Available in White and Colors

PURE white lead paint, ready-to-use, in white and colors is now being produced by several paint companies. Heretofore, white lead has been generally available only in paste form and mixed on the job with linseed oil and tinted to taste or specification.

Now those who do not wish to reduce white lead paste to paint consistency may purchase the ready-to-use product in many localities throughout the United States. It is being dis-

tributed from such key centers as Chicago, St. Louis, Milwaukee, Boston, Philadelphia, Richmond, York, Pa., and other cities to many localities in quantities sufficient to take care of spring painting orders.

Buyers now have the choice of purchasing paste white lead, which can be mixed properly for all common surfaces and tinted exactly as desired, or the convenient ready-to-use white lead paint in white or popular colors.

Water Works Convention

The 1940 annual convention of the American Water Works Association will be held April 21 through 25, with headquarters in the Hotel Muehlebach, and meetings and exhibits at the Municipal Auditorium, Kansas City, Mo. Everyone interested in the many problems of water works operation should attend to participate in and receive the benefit of useful papers and discussions and to see the instructive exhibits. All are cordially invited to visit the Lead Industries Association booth.



THE Lead Industries Association receives many inquiries from readers of LEAD about paint. In this column we shall endeavor to provide helpful basic data about paint to assist anyone who wants to pursue the subject further. A study of paint, and the ability readily to distinguish between high quality and low quality paint, will be found to repay the architect, engineer and contractor many times over. Unfortunately, basic technical information about paint is not generally found in handbooks on materials of building construction or other sources relied upon by the technically trained for helpful, authoritative data.

The best place to go for reliable paint information is to unbiased, impartial sources such as Federal Government Bureaus, particularly the Forest Products Laboratory of the U. S. Department of Agriculture and the National Bureau of Standards or States which have studied the subject. In this connection the reports of the North Dakota Regulatory Department are particularly illuminating.

Some years ago North Dakota adopted legislation designed to protect the farmer from the sale of fraudulent paint. In the interim North Dakota has published many interesting and

valuable bulletins based upon the information derived from studying the paints sold within its borders. To the uninitiated some of the disclosures made by the North Dakota publications will be found very enlightening.

For example, the recent bulletin of the North Dakota Regulatory Department* publishes the composition of a large number of paints sold in North Dakota and while there are many high-grade paints reported in the bulletin, there are also a number of very low-grade paints in some of which the pigment contains an excessive amount of extender materials and the vehicle is adulterated with water. Paints of this low-grade class do not conform to generally accepted standards such as the specification paints of the Federal Government.

It is generally acknowledged that white lead is a very important ingredient in exterior paints and some of the low-grade paints listed in the North Dakota bulletin contain very little, if any, white lead, which in itself is a definite indication of exterior paints of inferior quality.

Isn't it a pity that when the user buys such low grade paints and goes to the trouble of having them applied, all the hard work and expense goes for

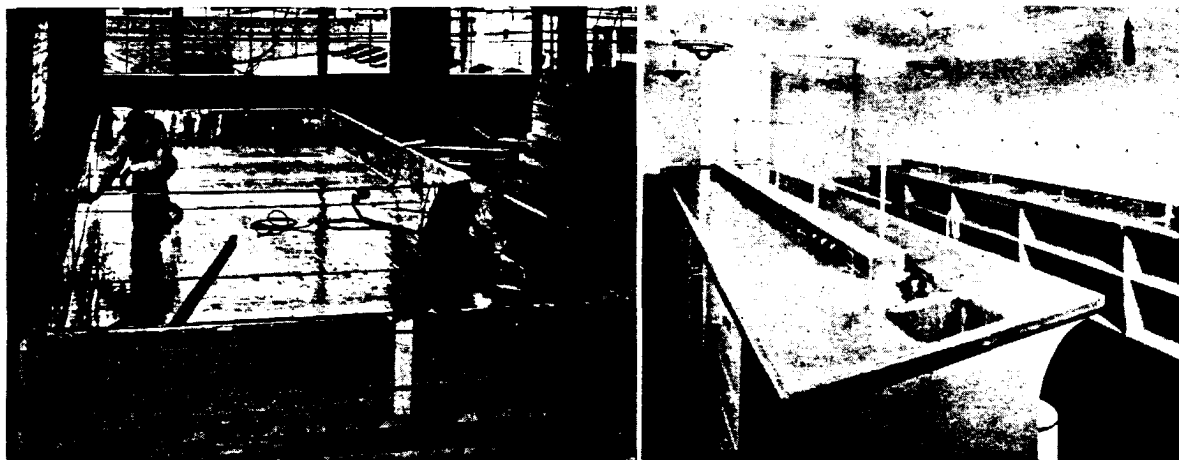
naught, for the paint at best will have only a short and unsatisfactory life.

The reason why low grade paints do not contain white lead is that white lead costs paint manufacturers about five times as much as extenders. White lead is, therefore, conspicuous by its absence in low-grade paints.

Some of the most satisfactory exterior painting work is done with pure white lead paint which is usually made for each particular job by thinning paste white lead with linseed oil, turpentine and drier in accordance with well understood formulas which have long stood the test of time. Such paint is readily made in any paint shop or may be mixed on the job and may be tinted to any desired color by adding the proper amount of tinting color materials. In some exterior paints, other white pigments are added for certain purposes, particularly to increase the hiding power, but all high quality exterior paints should contain a large proportion of white lead and one excellent method of judging the quality of an exterior paint is to note the amount of white lead contained in the formula.

* Bulletin No. 53, Paints and Varnishes, by F. Roberts and C. S. Ladd. Published by North Dakota Regulatory Department, Bismarck, N. D., 1938. Price 50c.

Chemical Tank and Laboratory Table-Tops Made of Lead



At left, lead burning the seams in a lead-lined chemical tank; at right, one of 203 lead-covered laboratory tables and lead-lined sinks

FOR use in conjunction with corrosive chemicals, lead is one of the most economical and efficient materials at the disposal of engineers. Great quantities of sheet lead and lead pipe are used in the construction and operation of chemical and industrial plants as well as in laboratories and similar institutions.

In the photographs two jobs are shown, fabricated for companies in San Francisco, Cal. On the right is the installation of a lead laboratory table-top, one of 203 units. These table-tops are made of sheet lead with all joints and seams lead-burned. Thus, on the top of the tables or in the sinks, only lead is exposed to the chemicals used. In the other photograph a wooden form is being lined with sheet lead to form a chemical tank. All joints and seams are also lead-burned.

In addition to the corrosion resistance of lead this material has other

advantages for laboratory tables. Being relatively soft it greatly reduces breakage of laboratory glassware, saving loss of solutions and time. Apparatus may be securely fastened down to table-tops through the lead covering with ease, and, if removed later, the holes can readily be closed. Also, to insure exposure of resistant lead only, plugs, washers, and stoppers for sinks are available from manufacturers.

Sheet lead for chemical installations should, generally, weigh not less than 6 lb. per sq. ft., although in many cases it may be advisable to use even thicker sheets. Lead pipe for laboratory wastes and vents should be specified "B" or "M" weight in accordance with the accompanying table.

In determining the weight of lead pipe in chemical plants, however, other factors such as temperature and corrosiveness of the solutions should be considered. All branches and joints in lead pipe and sheet lead for chemi-

cal installations should be lead-burned to insure that only a homogeneous surface of lead is exposed to corrosives.

Pliable and highly workable sheet lead and lead pipe make the fabrication of chemical equipment easier. This factor, plus the high salvage value of lead, mean added economy. The fact that lead is highly serviceable in such installations is proved by the many thousands of tons of sheet lead and pipe installed every year in plants and laboratories where many varied corrosive chemicals are made, handled, or stored.

The accompanying list contains some of the more commonly used chemicals with which lead may be employed. It is recommended, however, that tests be run prior to installation because operating conditions affecting performance vary from job to job. Various concentrations, temperatures, and added chemicals all have influence on the proper selection.

"B" or "M" Weight Lead Pipe

Dia. Wt. Per Ft.			Dia. Wt. Per Ft.		
in.	lb.	oz.	in.	lb.	oz.
1¼	3	12	2½	10	10
1½	5	..	3	12	8
2	7	..	4	16	6

Aluminum Sulphate	Mixed Acids	Sodium Sulphate
Ammonia Vapor	Nitration Mixture of H-Acid	Sodium Sulphide
Ammonium Sulphate	Para-nitrophenol	Sodium Sulphite
Antimony Tri-Chloride	Phosphoric Acid	Sulphonations
Bleach Liquors	Phosphorous Chloride	Sulphur Chloride
Brown Acid Mother Liquor	Reductions	Sulphur Dioxide
Carbonates, Soluble	Sodium Bisulphate	Sulphuric Acid
Chlorine Gas	Sodium Chloride	Sulphurous Acid
Hydrofluoric Acid	Solution, or sea water	Sulphuryl Chloride
Koch's Acid	Sodium Hydrosulphite	Zinc Chloride
	Sodium Hyposulphite	

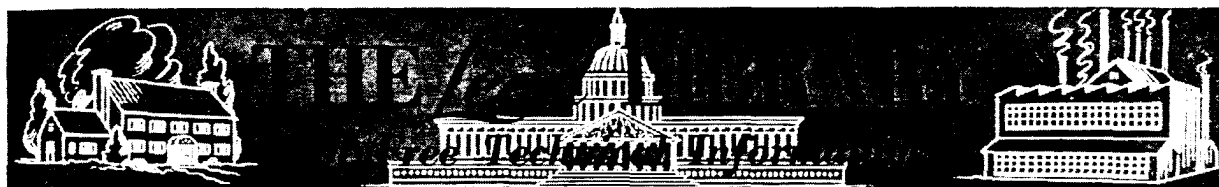
Attractive Eugene, Oregon, Home Painted with White Lead

PURE white lead and oil decorate and protect this charming Eugene, Oregon, residence. For the interiors four coats of white lead were used, mixed on the job and tinted to desired shades, insuring a permanently attractive and washable finish. The warm, spotless white of the exterior is one of the many reasons why architects, builders, and owners choose white lead for better painting. Moreover, this beauty of white-lead painted homes lasts for many years due to white lead's durability and may be refreshed at minimum expense in the future, for white lead surfaces require no costly future preparation.

Graham Smith of Eugene, Oregon, was the architect for this home, and J. E. Cupps of the same city was the painting and decorating contractor.



An attractive residence in Eugene, Oregon, designed by Graham Smith and painted inside and out with pure white lead and oil



The following articles and reprints contain information, drawings and specifications on the use of lead products helpful to architects, engineers and others in the construction industry. They are available, free of charge, upon request to the Lead Industries Association, 420 Lexington Avenue, New York City.

WHAT TO EXPECT FROM WHITE LEAD PAINT

An attractive 28-page booklet with charts, formulas, and mixing instructions covering some of the problems of painting and how white lead meets these problems.

PAINTING YOUR HOME by Dr. F. L. Browne, Senior Chemist, Forests Products Laboratory, Madison, Wisc.

A discussion of house painting reprinted from American Forests, May, 1939.

SOME PAINTING PROBLEMS AND THE ANSWERS by Dr. F. L. Browne, Senior Chemist, Forests Products Laboratory, Madison, Wisc.

Reprinted from the National Real Estate Journal, Sept., 1939.

WHITE LEAD PAINT FOR MUNICIPAL, COUNTY AND STATE GOVERNMENTS

Specifications and information covering the purchase, use, and application of white lead paint.

STAMFORD'S DOUBLE LIFETIME HOME

A complete analysis of hard lead flashing, white lead paint, lead plumbing, plywood and red cedar Certigrade shingle details and installation methods. Reprinted from the American Builder, July, 1939.

SHEET LEAD INSTALLATION DETAILS

A detailed analysis of the principles and application of lead flashing and sheet lead work for small homes. Reprinted from Sheet Metal Worker, June, 1939.

SUMMARY OF NOTES ON LEAD ROOFING

Reprinted from Sheet Metal Worker.

SHEET LEAD SHIELDING X-RAY ROOMS

A discussion of X-ray protection and installation methods reprinted from Sheet Metal Worker.

PLUMBING CODES—AN ANALYSIS AND SURVEY

By Robert Dick, Member, Research Committee, American Society of Sanitary Engineering.

A detailed study of modern plumbing ordinances, their purpose, deficiencies, proposed remedies and future outlook.

LASTING LEADWORK IN MODERN PLUMBING

By T. N. Thomson, Technical Editor, Plumbing and Heating Journal.

Reprinted from Plumbing and Heating Journal, Feb., 1939.

LEAD PUT IN AT SCREW PIPE COST ON COMMODORE PERRY PROJECT

Reprinted from Plumbing and Heating Business, Jan., 1940.

UPON REQUEST, THE LEAD INDUSTRIES ASSOCIATION WILL BE GLAD TO MAIL "LEAD" REGULARLY, FREE OF CHARGE, TO THOSE INTERESTED, AND WILL COOPERATE, WITHOUT OBLIGATION, IN THE SOLUTION OF YOUR LEAD PROBLEMS

There's a SERMON on PAINT in this HISTORIC CHURCH

HOW much good paint contributes to the preservation of good architecture is strikingly illustrated by this lovely old Long Island church, built in 1784.

In all its 156 years not a single wooden shingle has had to be replaced — due in no small part to the protection against the ravages of time and weather afforded by pure white lead paint used exclusively in renewing its gleaming beauty through the years.

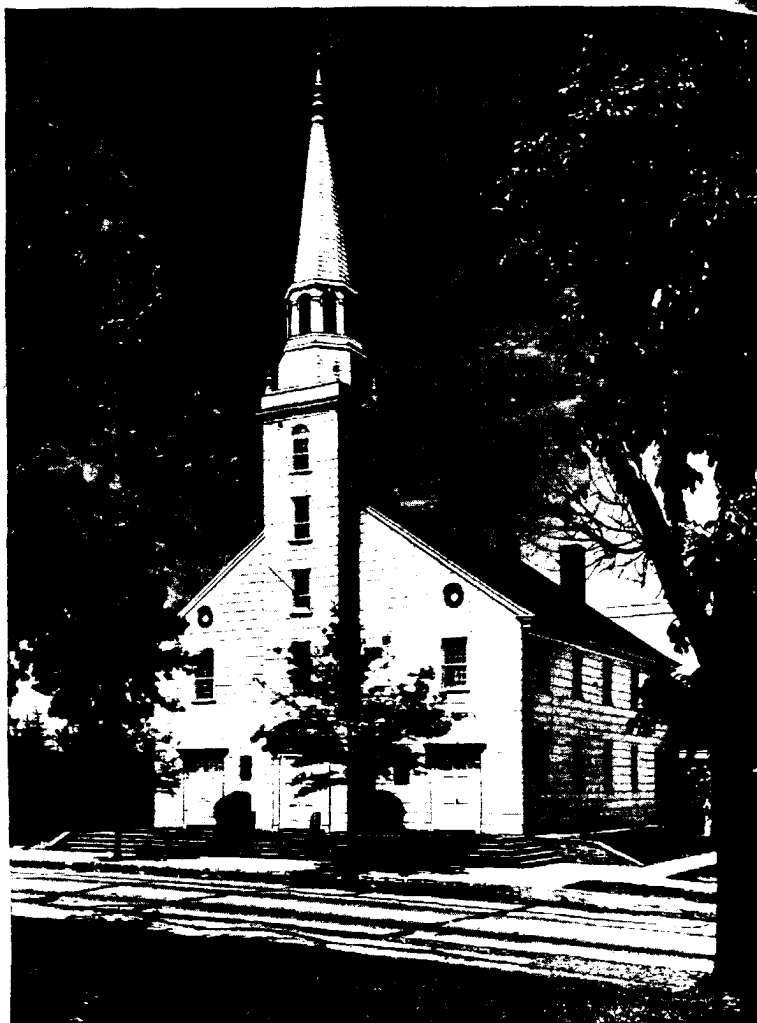
It's worth remembering that white lead — *made from the metal lead* — gives paint an elasticity and toughness which enables it to last for years without cracking and scaling.

This not only insures longer wear and lasting beauty — it also forms an impervious seal against the elements, protecting the construction beneath.

And when you consider in addition that white lead's high spreading-rate makes it one of the most economical pigments to use, it's easy to understand why paints made with white lead are preferred by so many leading architects.

That's why it's a good idea in specifying paint to make sure how much white lead it contains.

WHAT RANGE OF COLORS CAN YOU GET WITH WHITE LEAD? This is only one of many important paint questions you'll find fully answered in the valuable booklet "WHAT TO EXPECT FROM WHITE LEAD PAINT." Send for your free copy today.



156 YEARS YOUNG—First Presbyterian Church, Huntington, Long Island, built in 1784 and protected since its erection by pure white lead paint.

And it's pretty safe to say: the higher the lead content, *the better the paint*. You can't, for example, get a more durable paint than one containing one hundred per cent white lead. This is the kind good painters mix from lead-in-oil. In many localities it is also sold now in prepared, ready-to-use form — in white and colors.

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