



White Lead Exclusively On Painter's Attractive Home



WURTS BROS.

Home of Mr. John Gordon, painting contractor, at Glen Cove, N. Y., painted with pure white lead paint.

MR. JOHN GORDON, Glen Cove, Long Island, N. Y., painting contractor, whose work in the past twenty years or more has included painting residences of all kinds, among them both small cottages and some of the largest and finest estates on Long Island, uses pure white lead paint almost exclusively for all purposes, exterior and interior. Perhaps best demonstrating this expert's faith in white lead, however, is the fact that his own attractive home is and always has been painted inside and out with pure white lead.

In the 11 years Mr. Gordon has owned this home the exterior has been painted just three times, the last time in 1930, and is not in need of repainting yet. The interior was last painted in 1929.

The white lead interior has been tinted a number of different colors, green, putty and yellow. By using white lead, tinted for the particular job, the exact color and shade that the home owner wants

can be obtained. White lead interiors can also be washed repeatedly so they may always be clean and maintained at the proper color.

As demonstrated by the service white lead paint has given on the outside of this house, it can be relied upon to give long life, and the expense of repainting is comparatively low because white lead paint never has to be burned or scraped off before repainting. Thus, both the expense of removing old



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Detail of the paint on the exterior of the Gordon home, showing the perfect condition of the white lead after three years' exposure.

cracked and peeling paint and the expense of a new priming coat do not occur at repaint time.

White lead applied by good craftsmen is the most reliable paint that can be employed, and when painting contractors themselves use white lead on their own homes there can be little question as to its preeminence as a paint material.



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Living room in the Gordon home with walls painted with tinted pure white lead paint.



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The Gordon dining room done with tinted pure white lead paint four years ago.

New Pleasantville, N. J., Plumbing Code Advocates Lead

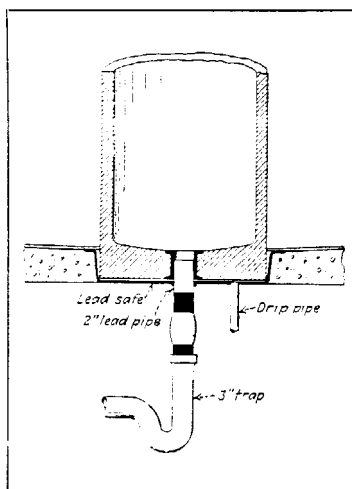
THE City of Pleasantville, New Jersey, has recently adopted a revised plumbing code which protects both home owner and plumber by requiring the use of proper materials, including a liberal use of lead. It is one of the first results of the movement on foot in New Jersey, expressed in resolutions passed by both the Master and Journeymen Plumbers Associations of that State this year, and reported in the July and September issues of LEAD, to use more lead in plumbing.

Some of the provisions of the Pleasantville code will no doubt interest authorities responsible for plumbing codes everywhere. In part the code reads:

"All soil and waste lines either to the City sewer connection at the curb line, or to the cesspools and any part of the soil or waste lines in any part of the drainage system, of any building or buildings, shall be of cast iron bell and spigot pipe or lead pipe. Terra cotta, steel, wrought iron or any threaded pipe for soil or waste lines will not be permitted.

"All underground drains and waste lines shall be of cast iron bell and spigot pipe, with caulked leaded joints or lead pipe with wiped joints. Black or galvanized iron pipe, or any other kind of pipe with threaded joints will not be permitted. The house drain within the buildings shall be securely hung from the joists, or properly laid on brick piers 9 in. thick and not more than 7 ft. apart; unless this is impracticable, in which case it must be laid in a trench cut at grade. The house drain shall have a fall of at least $\frac{1}{4}$ in. to a foot. When pipes pass under a wall of a building there shall be a relieving arch to prevent the pipe from being broken by the settling of the foundation. All drains shall be provided with openings for cleaning purposes. The same are to be closed with brass threaded plugs. All other drains or soil pipes connected with the main drain, or where the main drain is above the cellar floor shall be of cast iron bell and spigot pipe or lead pipe.

A stall urinal installed with lead safe and stub according to the new Pleasantville, N. J. plumbing code.



"In all cases where sewer pipes are laid in the street, in front of any improved property, the Board of Health, may, if they deem it necessary, compel the owner or owners thereof to connect the drainage of all buildings on said property with the City sewer system."

"All syphon jet, syphon action or other improved water closets within any dwellings or buildings *must* be connected to a *lead bend wiped* on to a brass ferrule, with brass floor plates soldered and screwed to floor. All branches into lead bends must be at least two (2) inches back of heel."

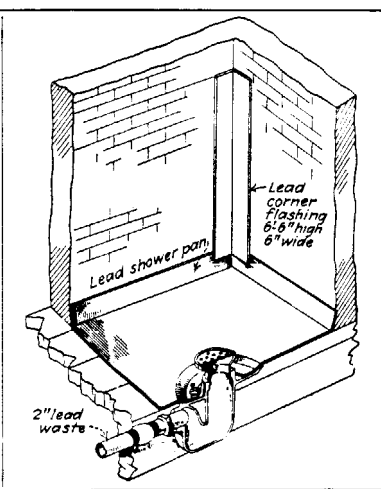
"No ideal or other make of cast iron closet bend will be permitted."

"All branch wastes must be lead pipe or cast iron bell and spigot pipe, wiped or caulked as the case may be."

"Each stall urinal shall have a three (3) inch waste pipe and three (3) inch trap, with two (2) inch lead pipe wiped on to a brass ferrule from trap to urinal spud."

It will be seen that these provisions eliminate inflexible plumbing unable to provide for settlement or other movement in the building and at the same time eliminate material innately short-lived. Inflexible plumbing may cause much trouble due to cracking and particularly breaking at the joint. Lead will give under stress without breaking. Joints in lead pipe are wiped, removing a great source of weakness—screwed joints. Lead itself is the most durable of the common metals and least affected by such substances as ammonia found in soil, waste and vent systems.

In addition, the code provides that all shower stalls above the ground floor not having receptors must have sheet lead pans under the entire floor of the stall and lead strips not less than 6 in. wide nor less than 6 ft. 6 in. high in each corner. This provision protects the home owner against leakage which may cause



Stall shower showing lead pan and corner shields required by the new Pleasantville, N. J. plumbing code.

costly damage to walls and ceilings below and even rust and rot the beams and joists. It also protects the plumber who estimates on the basis of a quality job against the man who omits such provisions in his estimate.

The City of Pleasantville and Ernest M. Willis, Plumbing Inspector, George Haynes and John Van Sant, who were largely responsible for the new code,

are to be congratulated on the formulation of a code beneficial alike to the home-owner and competent plumber.

It is wise for any community to have representatives of both master and journeymen plumbers on any body of men empowered with plumbing ordinance revisions for they are best qualified to judge what will protect property owners and plumbers.

Lead Laboratory Table Tops An Opportunity for Plumbers

EIGHT years ago the table tops in the chemical laboratory of St. Cecilia Parochial School at Englewood, New Jersey, needed resurfacing because the original composition acid-proof tops were no longer serviceable. These tables were resurfaced with sheet lead and today show not the slightest sign of deterioration. The lead tops are apparently good for an almost indefinite life despite the hard usage such tables get when used by inexperienced youngsters just learning the ways of chemistry.

Each of the two long tables in the laboratory measures 20 feet by 4 feet and each is covered with a single sheet of lead. No soldering is used anywhere on the surfaces of the tables. The 6 lb. sheet lead was dressed over the edges and corners, turned under, and secured by means of screws on the under side, around the edges. Where sinks occur in the tables, the lead was cut out and dressed down into the sinks where it is held simply by being dressed securely in place. All of the waste pipes and traps are also lead.

Lead table tops are particularly suited to chemical laboratory work because of the high resistance of lead to corrosion by most chemicals. Lead's softness eliminates the breakage of much chemical glassware. This is both a direct saving of glassware, and, particularly in commercial laboratories, often prevents the loss of solutions it may have required hours or even days to make. Vibration, settling or hard knocks, which would crack stone table tops, have no serious effect on lead. Because of the adaptability of lead in the hands of a skilled lead worker, much more flexible laboratory installations may be made with it.

This type of work offers considerable business to the competent plumber—business which he never gets if other table surfacings are used, because tables with stone and other kinds of tops are supplied by manufacturers all made up. They are also an economy for the laboratory owner.



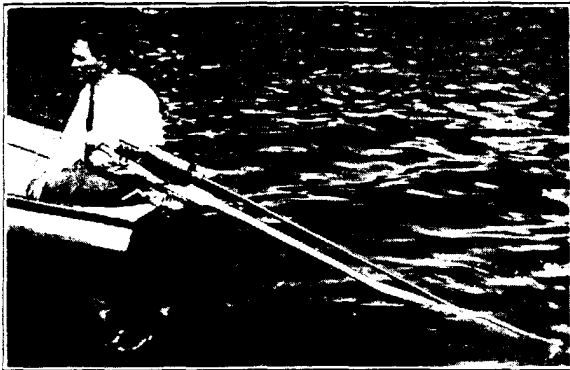
Chemistry class in session at St. Cecilia School. The lead table tops were installed eight years ago and are in perfect condition.

Lead wastes, preferably with burned joints, get around the great weakness of earthenware wastes, sometimes used for chemical work, because the flexibility of lead prevents cracking and leaks. Many plumbing codes do, and all should, require that chemical wastes be lead pipe with burned joints.

William Beck & Son, Englewood, N. J., plumbing contractors, made this installation.

Batteries Propel Row Boats

THE lead storage battery has now come to the aid of the fisherman and others who use row-boats and canoes. The Grimes Electric Oar provides silent propulsion for this type of craft without any physical effort and is powered by an ordinary storage battery such as everyone uses in his automobile. It can be operated at two speeds, one which will row an ordinary boat about two miles per hour and is ideal for trolling, and the other a fast rowing speed



The Grimes Electric Oar, powered by a lead-acid storage battery, provides silent, economical propulsion for a row boat or sail boat.

of around four miles per hour, faster than the normal man can row a boat. The power cost to row a boat all day is said to be between 9c. and 30c. depending on the rate paid for battery charging current.

The advantages of this type of propulsion include silence, which is essential to fishing and desirable at all times. The Oar can be operated safely even by a child. It weighs only 38 pounds, so that it is easily carried by hand or tied along the running board of a car. It can also be used as auxiliary power on sail boats as a means of getting home when becalmed. It is manufactured by the Grimes Electric Oar, Syracuse, New York, and is the invention of Mr. Charles P. Grimes.

Litharge and Glycerin Makes Strong, Versatile Cement

CEMENT composed of a mixture of litharge and glycerin has a wide application in industry. It is extensively used in the manufacture and installation of electrical equipment, gasoline pumps and chemical equipment, for setting acid-resistant brick, for fastening metal to glass, and for various other purposes.

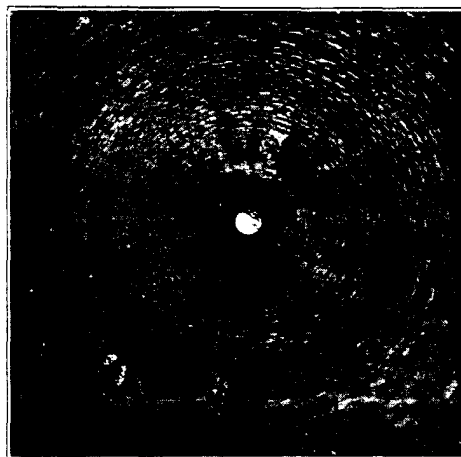
The mixture depends to some extent upon the purpose and the user. For a very quick drying cement, which will set hard in about 10 minutes, fine grained litharge is added to a mixture of two parts glycerin and five parts water. Dry litharge is used in an amount which makes a paste of a consistency suitable to the user. For a slower drying cement the water may be omitted and litharge added to 95 per cent grade glycerin, and for still slower drying 98 per cent (dynamite) glycerin may be used. The rate of setting is faster the finer the litharge is, seeming to be a direct function of the specific surface of the litharge particles per unit weight. A mixture often used consists of $3\frac{1}{4}$ parts litharge to 1 part 98 per cent glycerin, which will set hard in from 30 to 90 minutes, depending upon the kind of litharge. Litharge should be added to the vehicle immediately before using or the mixture will harden before it can be applied, so that it can not be used.

Litharge-glycerin cement makes a very strong, heat resistant and durable adhesive. Metal ornaments are often attached to glass teapots and similar articles. A litharge-glycerin cement is ideal for the purpose because the heat of hot tea or other liquids does not affect the bond. In paper factories, where acid-resistant bricks are used in connection with sulphite solutions, litharge-glycerin cement resists the action of corrosive solutions and consequently makes a fine bonding material for the brick. Where salt water is used, as in aquariums, ships and along the sea-coast, flanged joints in lead pipe are often packed in this cement which is unaffected by the salt water so injurious to most materials, and iron joints are often packed in this compound. There are only a few

examples of the many applications for this useful mixture. In short, litharge-glycerin cement may be helpful to any one having a particularly difficult problem involving adhesives.

If any reader believes that this adhesive or its companion product, white lead and varnish cement, may solve some of his problems, the Lead Industries Association will be glad to cooperate with him in determining the suitability of these mixtures for his particular conditions.

White lead and varnish cement, which is also a very useful adhesive for certain purposes, was described in the September, 1933 issue of LEAD.



*Courtesy HARBISON-WALKER REFRACTORIES CO.
Six year old digester lining in a paper plant, view taken from the bottom. The lining is Fiske digester brick, cemented with litharge and glycerin.*

Lead Equipment in Belgian Gas Purification Plant

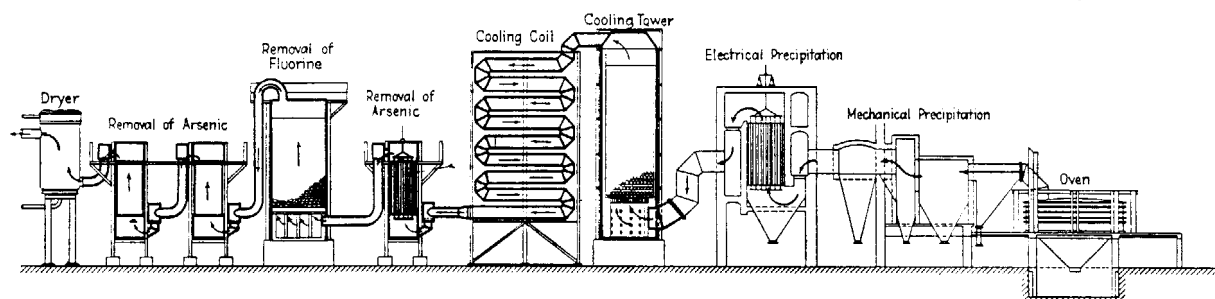
LEAD plays a leading role in the construction of equipment for the electrical purification of sulphurous gas resulting from zinc blende roasting, destined for producing sulphuric acid by the contact process. This is the method employed by the great European zinc producer, Société Anonymes des Mines et Fonderies de Zinc de la Vieille-Montagne, in its plant at Baelen, Belgium, where sulphuric acid is made.

Dust is first removed from the gases mechanically, and then electrically in Cottrell-Moeller chambers. The gases are then cooled in towers similar to Glover towers. These towers are completely lined with lead and cold 55° Bé. sulphuric acid flows through them. Further cooling to 30° to 40°C. is accomplished in a water-cooled lead coil and the gases are ready for removal of impurities.

Arsenic is next partially removed electrically in two parallel lead towers, which consist of three

super-imposed lead boxes with lead plates as positive electrodes and copper wire surrounded with lead suspended between. Arsenic comes off at the bottom as arsenious acid. The next step is the removal of fluorine in an ordinary lead tower into which water is sprayed in the upper part. Fluorine dissolves in the water and is collected at the bottom as hydro-fluoric and hydrosilicic acid. The final steps are further removal of arsenic in one or two more sets of two parallel lead towers, and then drying.

This article has not attempted to give a detailed outline of the process which has been more fully described in the technical press. It simply points out the importance of lead to the success of this chemical process and the widely varying corrosive conditions lead is called upon to resist even in this one installation. Extremely efficient and economical operation of the equipment has been reported.



Flow sheet of plant for purification of gas destined for production of sulphuric acid.
Lead and lead lined equipment shown in heavy lines.

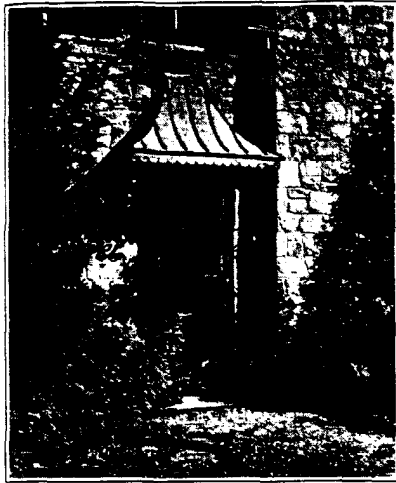
Lead Roofs Appropriate for Bay Windows and Doorways

A POPULAR and very attractive use for lead sheet on houses, the main roofs of which may or may not be sheet metal, is as an entrance hood, porch or bay window roof, and a covering for other small projecting sections of houses, or as an ornamental frieze over bays. By specifying lead for these purposes the architect obtains a material that blends with any other materials he may have selected for the main roof and for other parts of the house. Lead's neutral color is both extremely attractive in itself and completely harmonious. Nor does lead stain light paint or masonry adjacent to it. For porch and entrance roofs this point is of particular importance because of the general practice of using either light paint or light masonry for porches or around entrances.

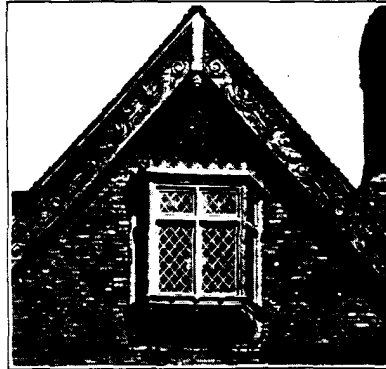
Small roofs are almost always of slightly irregular contour. Lead bends easily and dresses down nicely to fit the irregularities. It is easy to cut out or stamp patterns in lead like the ornamental borders shown in some of the accompanying photographs. Also ornamental designs can be readily hammered into the surface of the lead for decorative purposes (LEAD, Vol. 2, No. 4).

These roofs are generally installed using either the standing seam method of joining or batten type of roof. They make attractive regular designs, but the design may be varied as shown in two of the photographs. The herringbone effect is obtained by cutting the sheets to the desired shape, but it may also be obtained by using regular rectangular sheets and making the horizontal joints flat loose-locked seams. False standing seams can then be soldered to the roof sheets, breaking them where they cross the horizontal seams so as not to impede expansion and contraction (LEAD, Vol. 1, No. 7).

Lead Bays, Friezes and Canopies



Lead marquise, gutter, leader-head and leader on house at Scarsdale, N. Y.

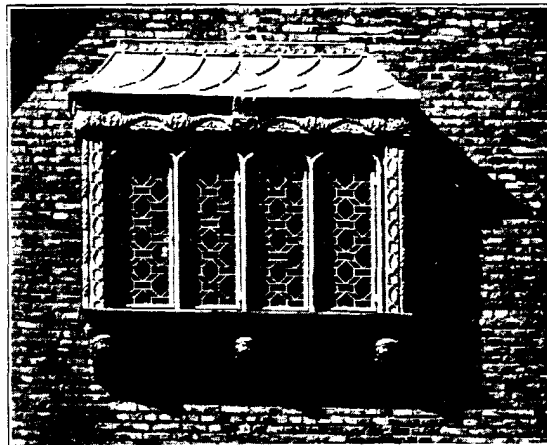


Ornamental lead cresting crowning a leaded bay window.
EDGAR I. WILLIAMS, ARCHITECT



Lead cresting and leaders on a house at Garden City, N. Y.
MISS OLIVE F. TJADEN, ARCHITECT.

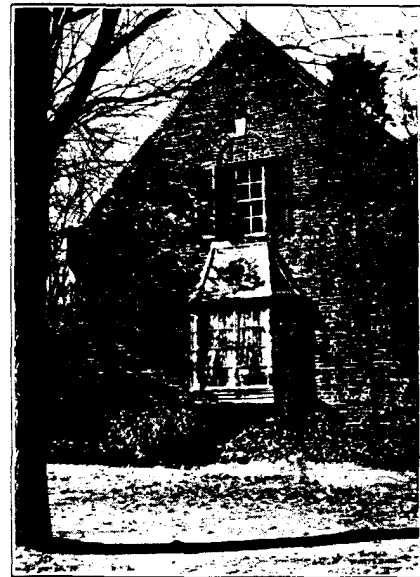
(RIGHT) Lead roof over a leaded bay window, showing effect of diagonal seams.
EDGAR I. WILLIAMS, ARCHITECT



(BELOW, CENTER) Lead roof and ornamental border over a bay window.
MISS OLIVE F. TJADEN, ARCHITECT.

Lead-roofed entrance to a private tennis court. Note design of seams.
DELANO & ALDRICH, ARCHITECTS

Ornamental lead roof over bay on the lodge of an estate at Wheatley Hills, N. Y.



PHOTOS BY WURTS BROS.

White Lead Lasts On Servants' Cottages on Large Estate

FOURTEEN cottages which house many of the employees of a large estate at Glen Cove, Long Island, N. Y., were painted with pure white lead paint in 1930. After three years' exposure to the climate of the locality, which is particularly severe on paint, the condition of the white lead on these cottages indicates that it will be at least a couple more years before repainting is necessary.

It is easy to understand why white lead paint is used on the main residences of so many fine estates, because there cost is secondary to results. But when white lead is used for service buildings it is for more than beautiful results. It is because white lead offers the best protection to the property at the lowest cost.

This statement may seem surprising to many who think of white lead as an expensive paint because they know it as the quality product of the paint industry, and it is true that it costs more per gallon than many other paints. But paint amounts to only



WURTS BROS.

Superintendent's house on the Glen Cove estate, also painted with pure white lead paint in perfect condition after three years' rigorous exposure.



WURTS BROS.

Some of the fourteen cottages belonging to an estate at Glen Cove, N. Y. that were painted with pure white lead paint.

about a quarter of the cost of any paint job, the balance going for labor, so the use of white lead adds only a little to the total cost of a job, even when compared with the cheapest paint. Often fewer gallons of white lead paint are needed than of other paint so that the cost of material is actually no more and may be less.

The real cost of a paint job, however, is not the lump sum paid to have it done. White lead paint outlasts any other, which means that the cost per year of a white lead job is actually lower, sometimes as much as 50 per cent, than jobs done with other paints.

Repainting must also be considered. Because white lead does not crack or peel it does not have to be burned or scraped off before repainting. Thus one expensive item is removed at repaint time if white lead is originally used. Also burning or scraping removes paint to the bare wood and a new priming coat is necessary before repainting. If white lead has been used there is already a good foundation for repainting, so no new priming coat is needed. Therefore, when white lead is already on a building repainting cost will be reduced by the cost of scraping or burning off old paint and by the cost of one extra coat of paint, both labor and material.

The Cottages described in this article were painted by Mr. John Gordon, the painting of whose own house is described elsewhere in this issue.

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