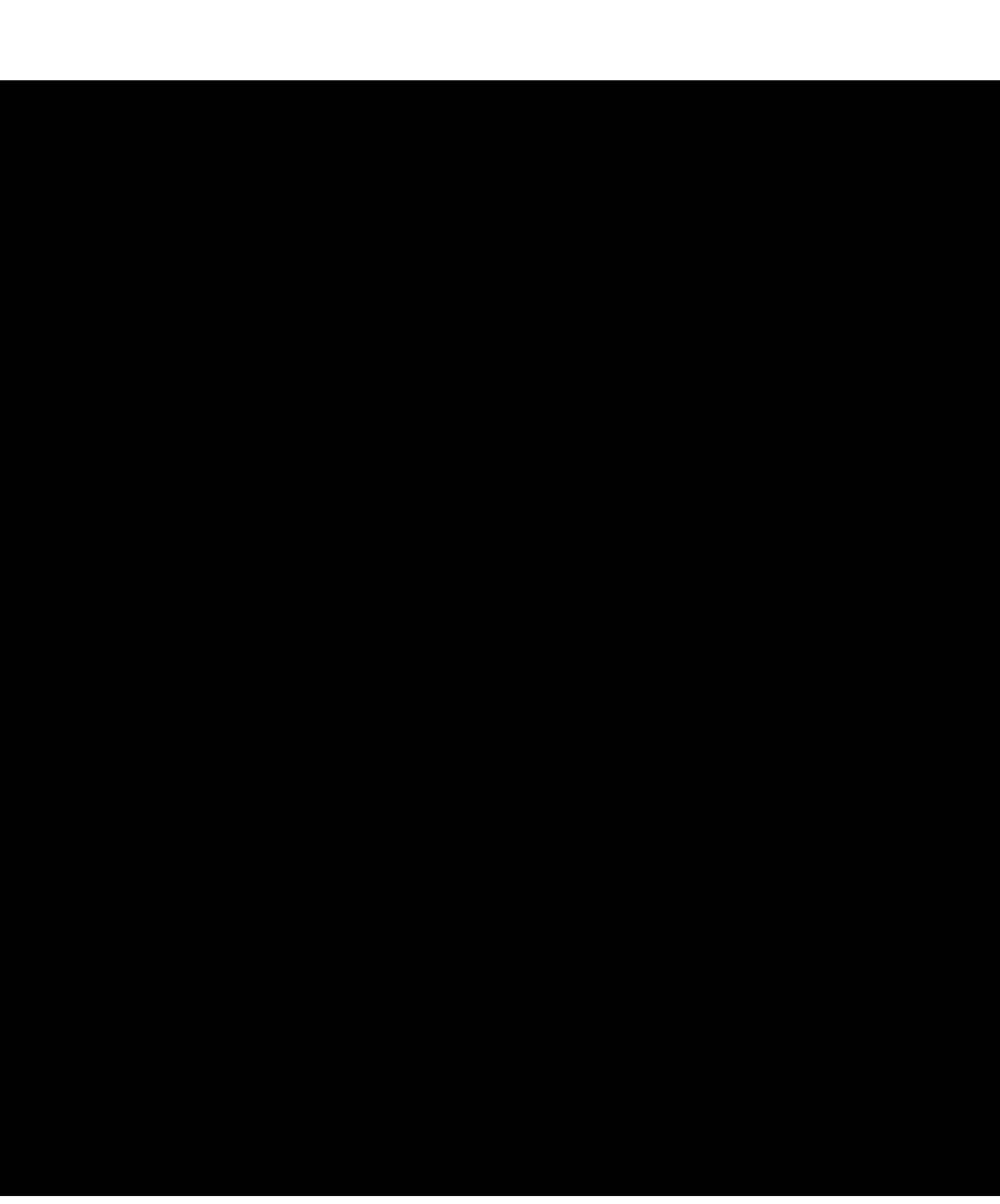
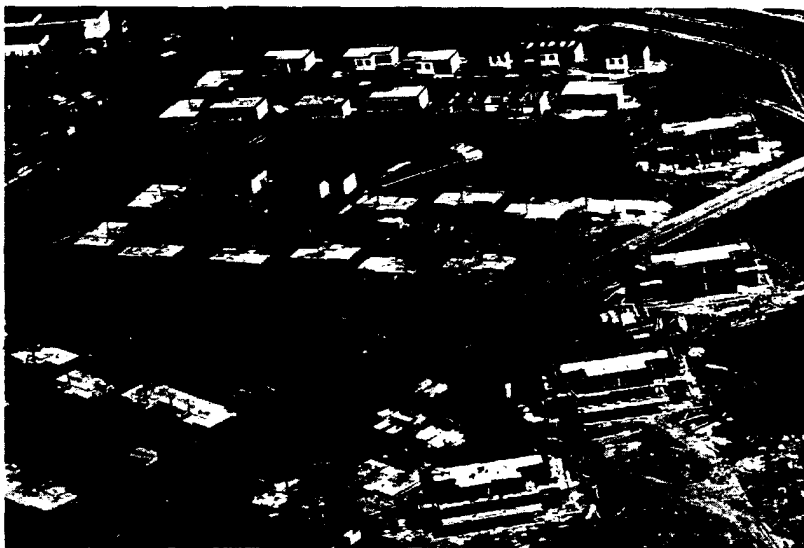




Lead Installations Protect Defense Units

TO house some of the many workers required by the huge new North American Aviation, Inc., plant between Dallas and Ft. Worth, Tex., it was necessary for the government to construct new housing facilities. Two defense housing projects for this purpose, each having 300 living units, are known as Avion Village and Cockrell Hill and were built by the Federal Works Agency. In the plumbing installation of both projects, the government used large quantities of lead products.

Water closet connections were made with 3-in. lead pipe, requiring nearly three tons of lead pipe for this purpose. In addition more than a ton of 1½-in. XL (D) weight lead waste pipe was employed. Vent pipe flashings were made from 3,000 lb. of sheet lead. For jointing of pipes 1,800 lb. of solder and 24,000 lb. of calking



Defense housing project under construction near Dallas, Texas

lead were used. These projects thus add two more to the long list of government-built defense projects in which lead has aided to provide good quality sanitary systems.

Roscoe Dewitt and Burns Roench,

both of Dallas, were architects for Avion Village and Cockrell Hill respectively. Central Contracting Co. of Dallas was general contractor and Armstrong Co. was plumbing contractor.

Lead Resists Corrosion in Copper Sulphate Water Treatment Feeder

SEVERAL years ago the Atlanta Water Works developed a continuous copper sulphate feeder for water treatment which has proved efficient, economical and permanent. Its construction and operation are simple. The feeders are mounted outdoors at the influent and effluent ends of the mixing chamber. The outer shell of the feeder consists of a standard 3-ft. length of terra cotta pipe 24 in. in diameter. It is set, with the bell at the top, in 4 in. of concrete grout.

A cylindrical lead container having a bottom but no top fits into the upper 18 in. of the terra cotta pipe. The lower 18 in. is filled with sand topped with 3-in. concrete on which the lead cylinder rests. A thick-walled 1-in. lead pipe runs from the bottom of the lead container out through the side of the terra cotta to the point of application. To prevent stoppage a perforated lead baffle is fitted over the inlet

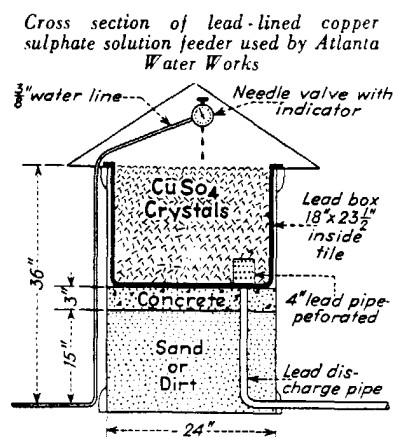
to this pipe in the bottom of the lead container.

The container is filled with random-size dry copper sulphate crystals. Water drips into the crystals through a pressure reducing valve and small orifice fed from a ⅜ in. supply line,

thus forming a uniform saturated copper sulphate solution. This solution flows out through the lead pipe to the point of application. A calibrated needle valve which admits the water through the orifice readily controls the amount of sulphate solution. A metal cover protects the apparatus.

The neat appearance is an added advantage of this equipment, which illustrates one of the many ways in which lead may be used because of its high resistance to corrosion by a wide variety of chemicals and because lead is so easily fabricated into special shapes. All joints in the lead in this equipment should be "burned," not soldered. It is wise to place a layer of tar paper or asphaltum on top of the concrete on which the lead container rests.

Paul Weir is superintendent of the Department of Filtration, Atlanta Water Works, which developed this useful device.



[2]

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

Auburn, N. Y. Maintenance Program Demonstrates Economy of White Lead

THE Auburn, N. Y., city hall and the West High School of that city, two modern buildings decorated with pure white lead paint, serve to illustrate once again the value of a white lead standard for municipal governments as well as for all other institutions which must purchase and apply paint at regular intervals.

Erected in 1930, the city hall in Auburn, N. Y., received its third pure white lead paint job during the Fall of 1939. Due in no small measure to the reliability of this pure white lead paint decoration, the condition and the appearance of the building has been excellent at all times since completion. Interiors, likewise, are painted with pure white lead and oil, in this case formulated to produce a flat finish and tinted to get the exact shades

most suitable for pleasant and efficient light reflection. Because of the excellent washing qualities of flat white lead and oil, the original beauty of these walls can easily be retained for many years. This building is a noteworthy example of good architecture and beautiful paint decoration combining to produce an outstanding city hall.

Built in the years 1938 to 1940, the West High School represents the modern architectural trend. Despite the large difference in style between this building and the city hall, both enjoy the advantages of pure white lead paint decoration. Exterior painting requirements are negligible on the high school. The entire inside of this

building with the exception of one special room is done using pure white lead paint. Since correct and efficient light reflection from walls and ceilings without harmful glare is of such importance in school rooms, great care was exercised to see that paint of the right degree of flatness and of pleasant shade was used. The exact paint desired was easily obtained by mixing pure white lead with oil and the appropriate tinting colors-in-oil. The high degree of washability inherent in flat white lead paint is of particular value in schools, where rapid soiling of the walls would require frequent repainting if surfaces could not be effectively and repeatedly washed.

Over and above these important physical qualities, pure white lead's universal standardization and ready availability from practically every paint dealer greatly simplifies municipal paint purchasing.



Auburn City Hall decorated inside and out with white lead paint

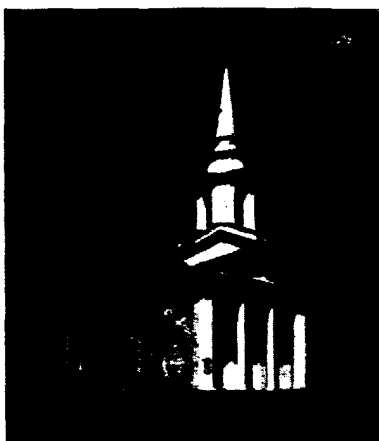


West High School features pure white lead and oil for interior decoration

Manchester Church Features White Lead

LOCATED in the heart of historic New England, the Center Congregational Church of Manchester, Connecticut, was founded during the stormy days of the Revolution. Since that time, five buildings have been constructed on the original site. The present church, erected in 1905, is a close replica of one of the earlier buildings, following the traditional architectural treatment.

Traditional likewise is a well-planned maintenance program featuring



Center Congregational Church beautified and protected with pure white lead paint

ing white lead paint. Experience has proved that pure white lead and oil alone assures beauty and continuous protection to the surface year in and year out. However long neglected, pure white lead and oil will not crack and scale or wear unevenly, eliminating the necessity for costly surface preparation as well as a new priming coat when the time for redecoration finally rolls around. This is the maintenance policy which keeps annual painting costs at a minimum. In contrast, the savings of a few cents on original cost per gallon with the use of "cheap" paint is seen as false economy when subsequent costly failures are taken into consideration.

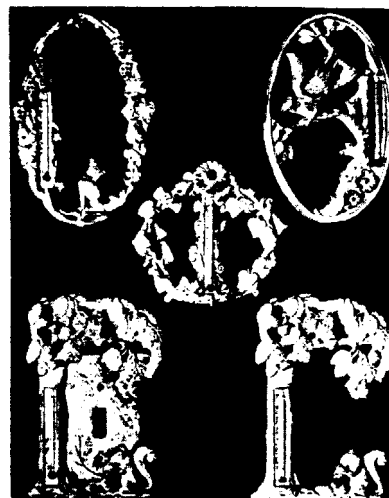
Lead Statuettes and Useful Novelties Have Decorative Value Inside and Out

DURABILITY, malleability and a comparatively low melting point—those physical properties which are the basis for lead's usefulness in industry as well as in home construction—combine to make lead a versatile medium for a wide variety of artistic uses as well. Being readily cast in moulds, lead produces statuettes and novelties free from harsh lines with a most pleasing finish which only improves with age as the beautiful, natural patina gradually develops. And, being exceptionally malleable, lead is likewise readily hammered into an endless variety of ornamental and useful objects.

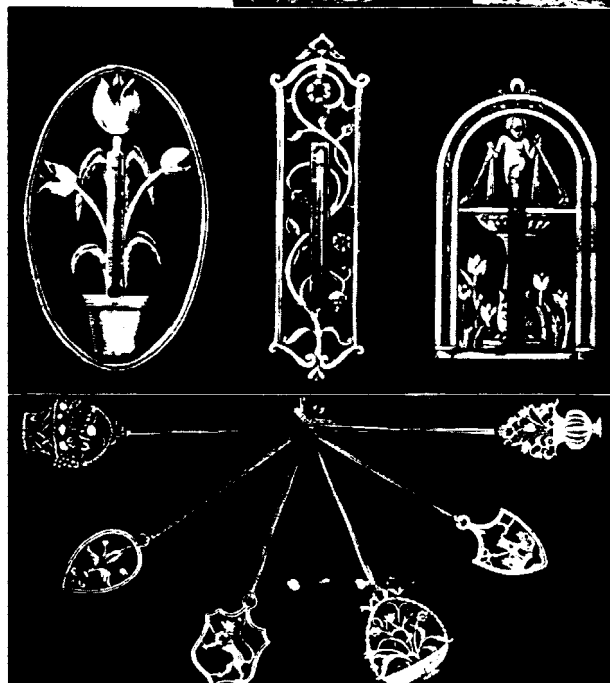
Outstanding among the artists using lead as a creative medium are the Florentine Craftsmen, Inc., of New York City who produce an extensive line of castings ranging from delicately sculptured statuettes to ash trays, curtain pulls and thermometers. Piped for fountains, the statuettes of animals as well as children—or a pleasing combination of both—add immeasurably to most any garden or terrace setting, while the useful lead objects of rare beauty carry a distinction which is a reflection of good taste.

Delicately sculptured lead statuettes ideally suited to any garden or terrace setting

Wall switches and other lead ornamental features are a mural asset



Thermometers with a lead background are most original



Curtain pulls of cast lead are handy as well as decorative





No. 10

White Lead Protects Old Southern Homes

THE mental picture of tall and stately columns reaching two stories to a classic portico, and all of it brilliantly white in the strong sunlight, is perhaps the most often remembered hallmark of the beautiful mansions to be found throughout the south.

Three widely separated examples of this magnificent architecture are shown on this page. Although they are in Kentucky, Mississippi and Florida, respectively, it will be noted that they all follow the same general architectural form. Again and again, the traveler will come upon these fine old landmarks of the ante-bellum era as he tours through the southern states.

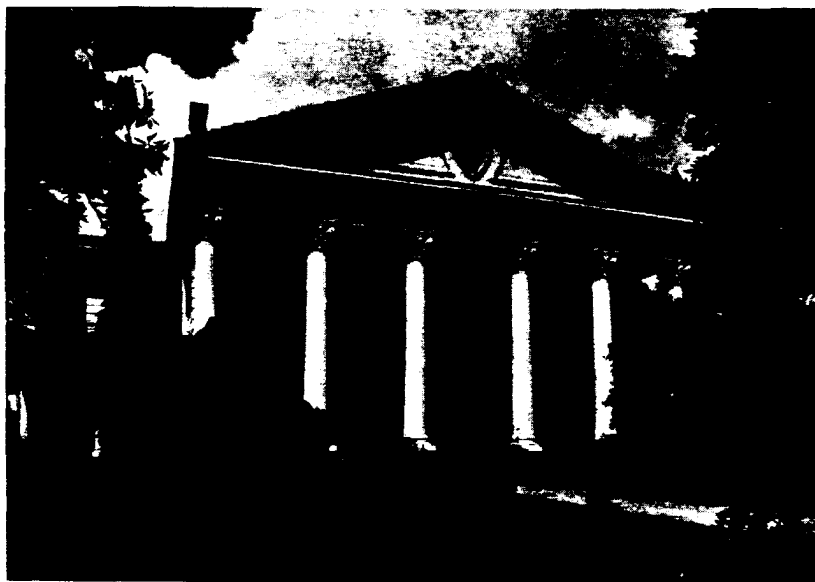
The nineteenth century home of Dr. J. C. Carrick in Lexington, Ky. The entire exterior of this beautiful mansion is protected with pure white lead and oil tinted to a cool pearl gray



A Tallahassee, Fla., home built about 1835 by Ann Eliza Hobbie on land deeded to the State of Florida by the Federal Government, the sale of which was to be used to defray the cost of building the State Capitol



Shaw-Nugent Mansion built about 1845 in Jackson, Mississippi decorated with white lead paint



Typical of the old south, these mansions are on a scale seldom attempted in modern home building. It is, therefore, even more fortunate that they remain in such excellent condition today. Despite the hot sun and the high humidity of the south, pure white lead paint most adequately protects these mansions against deterioration. It is more than likely that white lead and oil will continue to furnish them their gleaming white decoration for many generations to come. White lead paint remains always elastic, eliminating the possibility of unsightly cracking and scaling. The chemical affinity of white lead for linseed oil likewise produces a film most resistant to adverse conditions of surface moisture. However long neglected a surface painted with pure white lead presents a homogeneous film providing a base suitable for redecoration.

THIS IS NO. 10 OF A SERIES REPRESENTATIVE OF THE MANY AMERICAN LANDMARKS IN VARIOUS SECTIONS OF THE COUNTRY THAT ARE PRESERVED FOR THE FUTURE WITH PURE WHITE LEAD AND OIL PAINT. MANY OF THEM HAVE ALWAYS BEEN PROTECTED WITH THIS RELIABLE MATERIAL ACCORDING TO AVAILABLE RECORDS.

Lead Plumbing in State and Private Construction

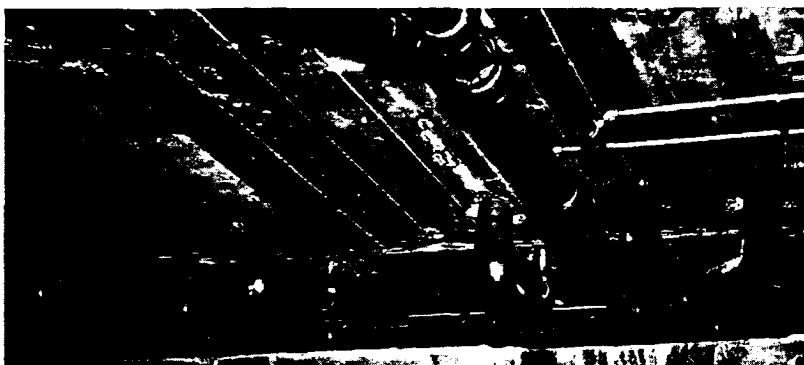
IN the heart of the beautiful southwest, the center of a great ranching area and with a climate noted as one of the healthiest in the world, is Albuquerque, New Mexico's largest city. Not only is Albuquerque's climate healthy, but its practices in plumbing sanitation can lay claim to the same distinction. Shown here are photographs of plumbing in buildings of widely different type in the Albuquerque area.

In both the new Girls' and Boys' Dormitory Buildings at the University of New Mexico, all lead waste pipe has been used. Bathtubs have extra-heavy lead drum traps, water closets are connected to extra-heavy lead bends, and waste pipe from tubs, drinking fountains, slop sinks, laundry tubs and lavatories is M (B) weight lead waste pipe. Stall showers



General view of the Gardner Addition in which lead plumbing predominates

Lead waste pipe roughing-in as used in Gardner Development



Lead and cast-iron installation in the girls' Dormitory at the University

are waterproofed with 4-lb. sheet lead pans and stack and roof drain flashings are also sheet lead.

John Gaw Meem and Hugo Zehner & Associates of Santa Fe are architects, and A. R. Staehlin of Albuquerque is plumbing contractor.

The Gardner Addition is about three miles outside of Albuquerque and consists of small homes, yet the same quality to assure permanent sanitation has gone into the plumbing.

There are 40 houses in this development of which B. Bruce Gardner is owner and developer. Water closet connections are all lead and M (B) weight lead is being used for other fixture wastes. Jim Woods Plumbing Co. is the plumbing contractor. A large amount of white lead and oil was used for the painting. This project proves once more that low cost homes can and should have good materials.

Typical lead roughing-in for lavatory wastes at the University of New Mexico

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



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



How to Use Rust Inhibitive Red Lead Paint for the Protection of Corrodible Metal

AS is well known to those experienced in providing protection for corrodible metals, red lead is by far the most economical and widely used of the several pigments exhibiting rust inhibitive properties. With the use of red lead paint, corrosion is actually checked, small breaks or cracks in the paint film being prevented from causing the gradual rusting out of an extended area by moisture seepage under the protective coating. What is equally important, red lead in combining chemically with linseed oil forms a firm, pliable, even-wearing film, which exhibits unsurpassed affinity for metal. The combination of these properties makes red lead the most popular coating for the protection of metal, as well as indispensable for the "difficult", poor anchorage surfaces resulting from the galvanizing and plating processes.

Uncoated Iron and Steel

The protection of uncoated iron and steel offers few problems as a rule, inasmuch as scraping or wire-brushing invariably suffices to remove loose rust and dirt providing a firm foundation for the red lead primer. However, in advanced cases of corrosion—which is the inevitable result of continued neglect—crude or spent lubricating oil proves useful to loosen the rust, expediting the cleansing process. With this treatment be certain to remove all oil remaining following the use of the brush and scraper by wiping with gasoline and a water wash, as the presence of an oil film prevents the adhesion of paint.

Treatment for "Oily" Surfaces

The smooth, somewhat "oily" surfaces of tin plate and galvanized iron

present a far more complicated problem. As those whose responsibility it is to specify paint have learned often as the result of some costly experience, it is difficult at best to make paint stick to surfaces with a glossy sheen. Consequently, surface preparation plays a most important role in producing durable paint jobs on "coated" sheeting.

Surface preparation on tin plate and galvanized iron is primarily a matter of cutting the glossy sheen to provide "teeth" for a firm bond between the paint film and the metal. Unless these smooth, "oily" surfaces are roughened, the adhesion of paint is all but impossible. Roughness is commonly produced by weathering, or, when time is pressing, by the application of a wash which artificially reduces the glossy surface.

Weathering Provides Anchorage

The weathering of tin plate should proceed for from two to six weeks depending upon moisture conditions, while six months is generally required before galvanized iron is sufficiently corroded to provide anchorage assuring the firm adhesion of paint. In either case, when corrosion has proceeded far enough, loose rust should be removed by scraping or brushing similar to that employed in the cleaning of uncoated iron or steel, leaving only that roughness which adheres firmly to the surface.

"Artificial" Wash Saves Time

Since weathering is an extended operation and immediate painting is often desirable, roughness can be successfully produced artificially with a four percent acetic acid wash, or, as is

specifically recommended for galvanized sheeting, with a copper sulfate, copper chloride or copper acetate solution containing about four ounces to a gallon of water. When these solutions have dried out thoroughly, rinse the metal with plain water, dry, and then apply the red lead as soon as possible to eliminate the possibility of further corrosive action.

Three Coats Standard

Three coats are the standard specification for new work. However, since structural steel should invariably be primed with red lead before delivery, two coats on the job usually suffice for this type of work.

In any case, on old work, where the original paint is still in good condition, two coats are adequate for repainting.

To produce the darker colored finishes, the body and finish red lead coats are tinted directly with colors-in-oil.

For decorative finishes on the lighter side, topcoats of white lead and oil are applied over the red lead primer based on the established formulas for exterior wood. The combination of white lead paint over a priming coat of red lead assures the same beautiful, durable finish which has made pure white lead and oil the standard protection for surfaces other than metal.

Back-priming Gives Security

Back-priming of metal before installation is a most advisable precaution. Since the sheets may be soldered in place before the paint has set, little time is lost in providing this added security. Back-priming guards against corrosion due to moisture seepage as well as from the condensation of interior humidity often enhanced by inadequate ventilation.

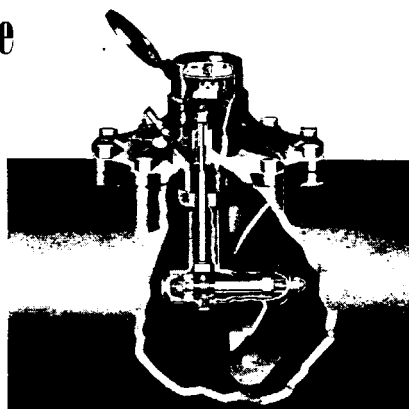
Lead Gaskets Assure Tight Joints for Saddle-Type Water Meters

LEAD'S softness, impermeability, flexibility and durability combine to make it an extremely useful gasket material in a wide variety of applications. Because it is soft, it fills the joint completely, taking up all irregularities, when the two joined parts are drawn up tight. Its flexibility permits it to be fitted to curved or irregularly shaped surfaces as well as flat surfaces. Its impermeability prevents any leakage through the gasket itself. Last but not least, it is highly resistant to attack and deterioration not only by water and air but by many corrosive chemicals like sulphuric acid.

A good example of lead's use as a

gasket material, but only one of hundreds that might be cited, is in the main-line saddle-type meters made by R. W. Sparling of Los Angeles. These meters fit over the curved wall of the pipe. To make a water-tight fit a lead gasket is placed around the opening in the pipe wall and a saddle having a curved bottom to fit the pipe is mounted over this gasket. The saddle has a flat upper surface to which the cover plate and meter are attached.

Thus the manufacturer of these meters provides a permanently water-tight connection between the saddle



Section of sparling saddle-type meter with lead gasket between pipe and saddle

and pipe. He has recognized that gaskets, although a minor part, play an important role in the proper functioning of the equipment.



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.

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.

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

* Not previously listed.

BRUSH UP ON YOUR PAINTING

A practical article on the selection and application of paint reprinted from House Beautiful, June, 1941.

LASTING LEADWORK IN MODERN PLUMBING

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

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

HOW LUMBER AND PAINT KEEP YOUR HOME ALWAYS IN STYLE

A brief digest of the advantages of painted lumber homes with color-styling suggestions and other interesting information.

*COMMERCIAL STANDARDS:

Calking Lead, CS94-41

Lead Pipe, CS95-41

Lead Traps and Bends, CS96-41

Official publications by the Government Printing Office of the above Commercial Standards as promulgated by the U. S. Department of Commerce through the National Bureau of Standards, effective June 25, 1941

NEW SIMPLIFIED STANDARD FOR LEAD TRAPS AND BENDS

File size leaflet with new standards for lead traps and bends as well as existing standards for lead pipe and calking lead, and other informative data.