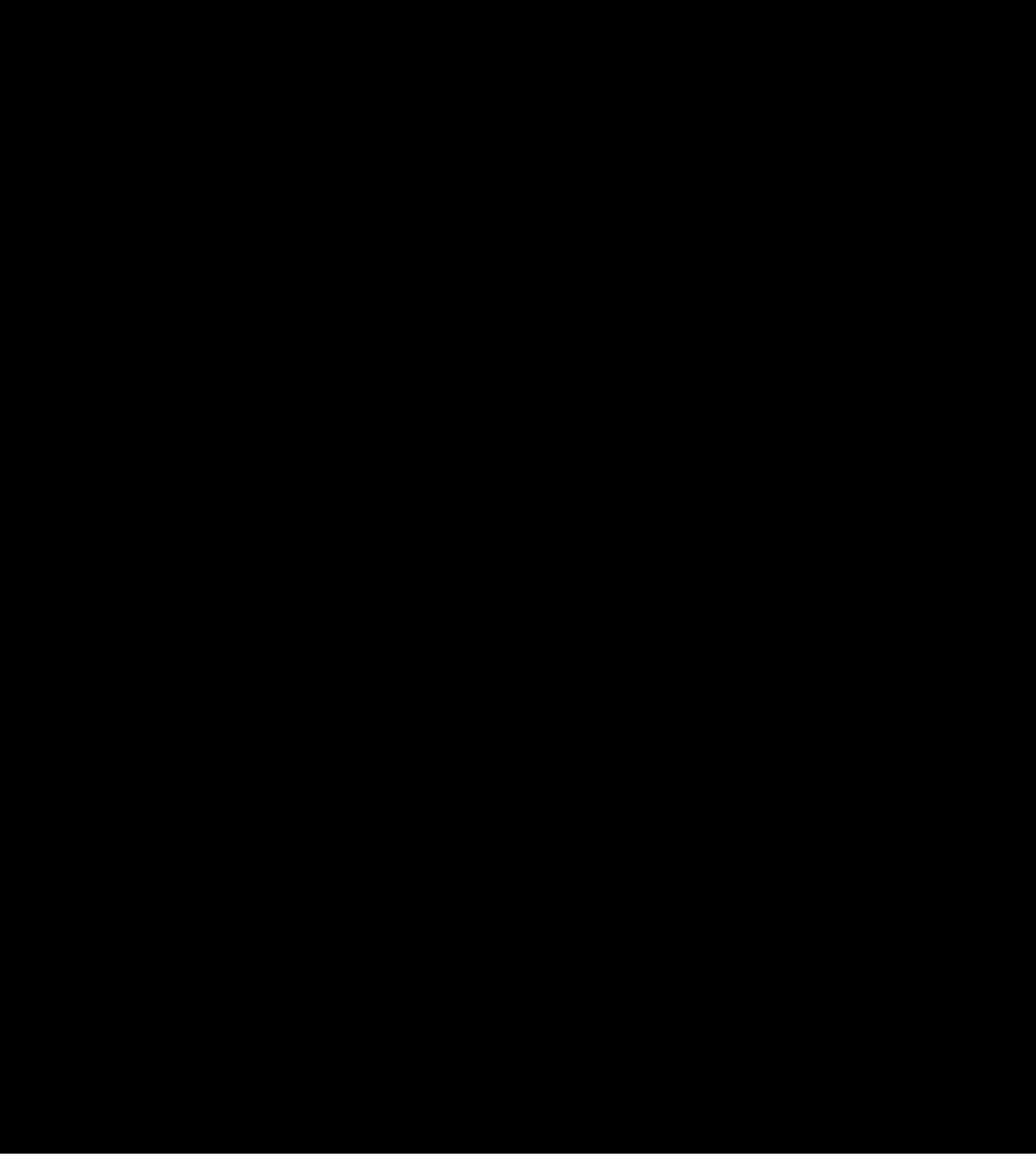




Reusing Calking Lead Saves Money for Springfield, Ill.



The use of a torch facilitates the removal of calking lead from joints. The lead may then be reused with perfect results, as in Springfield, Ill.

—STANFOTO

DUE to the unsurpassed durability of lead, it remains in perfect condition over years of service in joints in cast-iron pipe, a fact well brought out by the recent experience of the Springfield, Ill., water department in laying a new water main.

From 1866 to 1936, Springfield was served by a pumping station on the Sangamon River. In 1917, however, the city's increased size necessitated laying an additional 24 in. main. In 1936, a lake and complete new station were constructed southeast of the city,

with a 30,000 ft. line connecting the new filter plant with the mercantile district. A second transmission main is now being constructed connecting a new pumping station on the lake with the city distribution system. By thus shifting the pumping load, the new plant requires additional main capacity while the river plant no longer needs the 1917 main.

With an eye to economy, therefore, this main was closely inspected and found to be in such good condition that it might be moved from its old

position and relaid, after cleaning, for the new system. Inspection of the joints found the lead in perfect condition and it was a matter merely of melting the lead out of the old line and reusing it for calking the new joints.

The new line, using 15,536 ft. of 24 in. cast-iron pipe, has 1,390 lead joints, requiring in all 61,160 lb. of lead for calking.

Springfield is making a saving of about \$100,000 in laying the new water main because its water department had the foresight to use cast-iron pipe with durable lead joints for the main laid back in 1917. A substantial amount of this saving is directly attributable to the lead joints.

Since this lead has been reused, it also saved an estimated \$1,850 which would have been necessary for new jointing material. Likewise, it was a simpler proposition to remove the old line than if other jointing materials had been employed, but this additional saving would be difficult to estimate.

Thus, after 21 years of efficient service, the same lead will continue to provide durable and flexible joints in Springfield's new main. This saving is possible because of the indestructibility of lead, giving it always a high salvage value.

Charles H. Spaulding is water superintendent of Springfield, Ill.

Firmin Desloge Hospital



W. C. RUNDER, INC.

We wish to acknowledge that the complete group of architects for the Firmin Desloge Hospital (LEAD, Nov., 1938) were Study & Farrar, Arthur J. Widmer & Associates, Inc., associated architects, and Norman A. Rothenheber

Lead Solder for Unique Swedish Custom

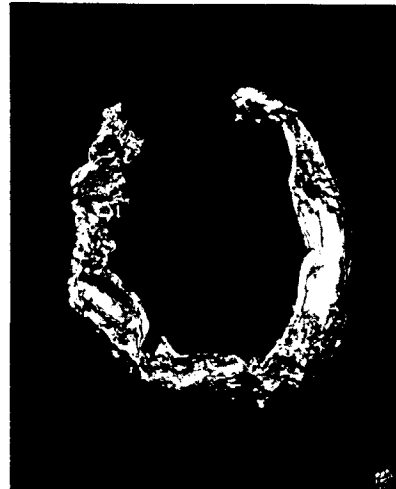
SOLDER is employed in a most unusual way in an old Swedish custom at New Year's time. On New Year's Eve just before midnight, pieces of solder are melted and poured into a bucket of cold water. The solder solidifies in various odd shapes and from these shapes, a person's fortune for the coming year is told. The crude forms taken by the metal naturally require a certain amount of imagination to interpret and many of the forms have definite established meanings.

In the photograph, a rough horse-shoe may be seen which was poured

by some lucky person for whom good fortune is predicted as a result. Another shape obtained is a boat, which signifies a journey, or a boat is laden with a rough granular mass that means money. That person's ship will come in during the near year. It is the custom, as a rule, to save these fortune telling solder castings from year to year.

The figure of a solder horse-shoe at New Year's means good luck according to Swedish custom

—WURTS BROS.



Modern Styling and Decoration with Plywood and White Lead

COMpletely modern in decoration and style, the service station and cafe interior shown in the accompanying photographs are excellent examples of the splendid results obtained by the use of pure white lead and oil paint and plywood.

Plywood was used in this service station, the first unit of a number to be built by the Federal Distributing Co., for both exterior and interior construction. Exterior surfaces are made of Resnprest, a special water and weather-proof plywood, while regular plywood was used for the interior. Resnprest 1/8 in. thick was used for the rounded corners and 3/8 in. for the remainder of the plywood construction.

The exterior was finished a gleaming white with four coats of pure white lead and oil with the paint tinted to a marine blue for horizontal trim and striping which emphasizes the modern streamlined effect.

The attractive dining room is that of the International Cafe at the 1938 Pacific International Livestock Exposition. The entrance, dining room walls, and the balcony stairway were paneled with Kraftwood, a new resin-sealed plywood which is scored at the factory to resemble wood paneling. The walls were treated with one coat of pure white lead and oil, blended with a small amount of sienna, and finished with a coat of shellac. This

produces a soft, attractive finish, yet does not hide the decorative graining of the panels. The plywood above the wall paneling was given three coats of pure white lead and oil, tinted to a soft cream color.

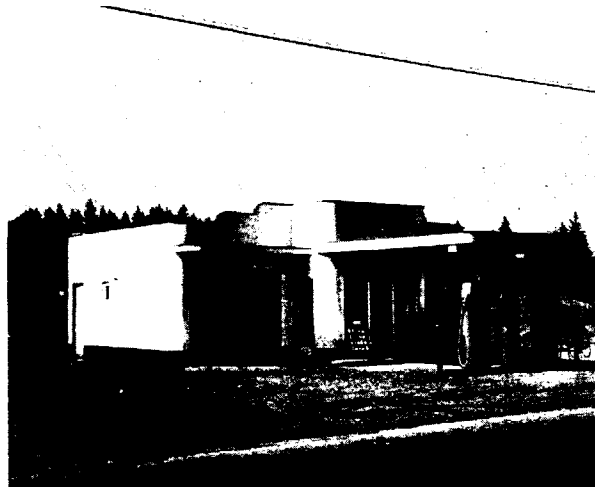
Pure white lead and oil paint is one material that disproves a sometimes encountered theory that new products and building materials require special finishes. For decades, white lead has topped the field in economy, durability and appearance, and, due to its unexcelled natural characteristics, is always a suitable painting material for any type of construction. Pure white lead and oil paint truly has been "modern" throughout the ages.

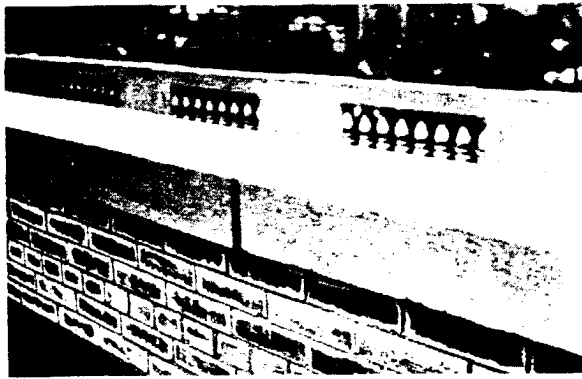
Dining room of the International Cafe, Barrett and Logan, architects, and the Federal Distributing Company's service station, Claussen and Claussen, architects, built with plywood and painted with pure white lead and oil

—COMMERCIAL STUDIOS



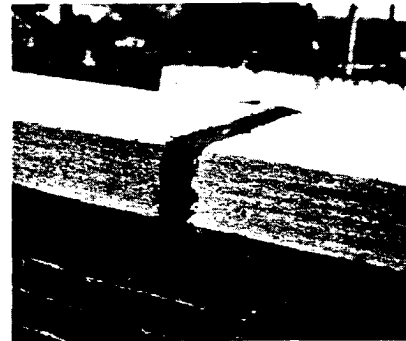
—SOWELL-SIMON STUDIO



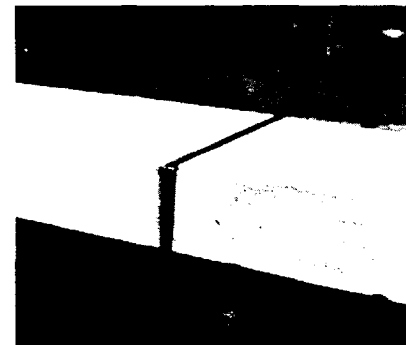


Note how cleanly this masonry joint has been made by using a lead "Weathercap"

Lead "Weathercap" for Effective Protection



BEFORE



AFTER

Two masonry joints, the masonry joint, and the masonry joint, is

For masonry joints, after installing the masonry joint, the masonry joint, is

THE recent development of "Weathercap", a new and practical adaptation of lead for the protection of masonry joints is another excellent contribution made by lead to the progress of the building industry. Of the several factors that contribute to leaks in masonry structures, the major one has long been recognized as the joint work between stone units on flat and projecting courses on the building wall, such as copings, cornices, porticoes and other parts. Lead "Weathercaps" are reported to be a permanent solution to the problem of waterproofing these joints.

Movement occurring in walls from expansion and contraction due to tem-

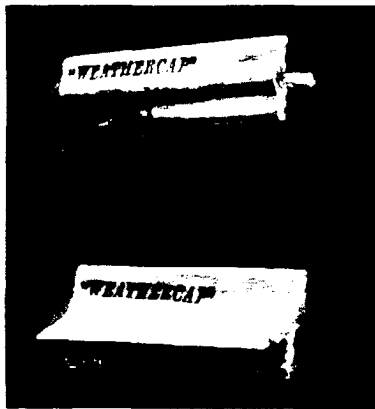
perature changes and alternate wetting and drying, from vibration, and from other stresses, has made it virtually impossible to keep these joints closed by the use of rigid jointing material, such as mortar. Moreover, development of the skyscraper, with its masonry hung, as it were, on a steel framework, rather than supported directly on the foundation, has only served to accentuate these factors.

For some time, the practice has been to rake out the outer portion of leaking mortar joints and refill with elastic adhesive calking materials, which, through their stickiness and their semi-liquid character, functioned successfully for their lifetime.

However, these calking materials, composed as they are of organic compounds, are subject to deterioration from sunlight and air. The cure that they offer has been only temporary, depending entirely on the effective life of the compound which may range anywhere from six months to around eight years. Consequently, the problem has remained a constant maintenance

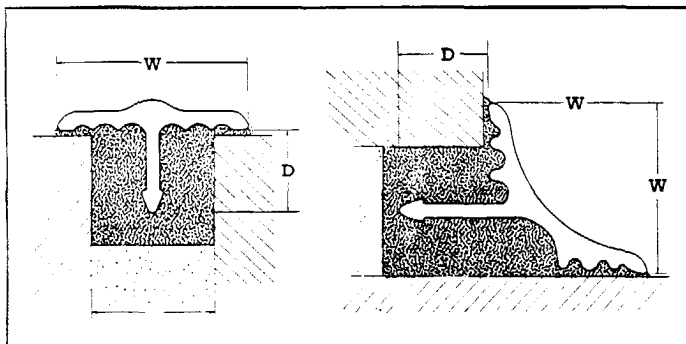
factor in the upkeep of the building, and to this periodic cost of replacement of calking must be added the far greater cost of damage caused by the recurrence of leakage due to our very human unwillingness to make such replacements until after breakdown has actually occurred.

"Weathercap" which provides the answer to this problem is a formed strip of pure soft lead consisting of a cross member sufficiently wide to over-

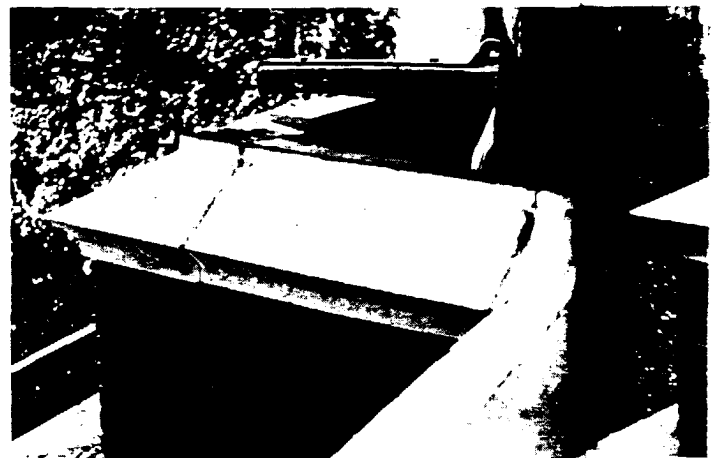


A view of the two types of lead "Weathercaps", type A for flat joints and type B for joints in intersecting planes

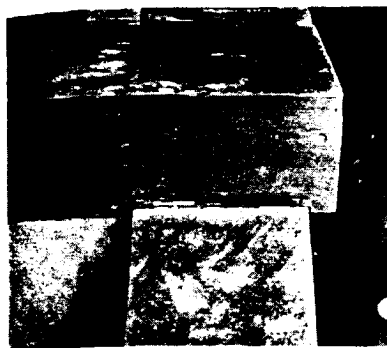
—WURTS BROS.



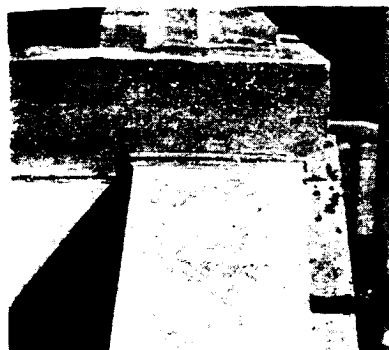
A striking example of masonry joint deterioration of the same



Effective Protection of Masonry Joints



BEFORE



AFTER

lap the masonry joint, and having on its underside anchoring means by which it is bonded to the calking compound with which the joint is first filled. It is made in various widths and in two shapes, as shown in the accompanying cuts, to provide for coverage of stones set both parallel and at right angles to each other. The joint is first raked out and packed with an excess of the best grade of calking compound. "Weathercap", cut to size

Installing both types of "Weathercap" on a typical water table, type A on the flat joints, type B along the window sill



and notched for the corners, is then embedded in the compound. As the lead cap is pressed into intimate contact with the masonry, excess compound is forced into the bonding grooves provided on the underside of the cross member.

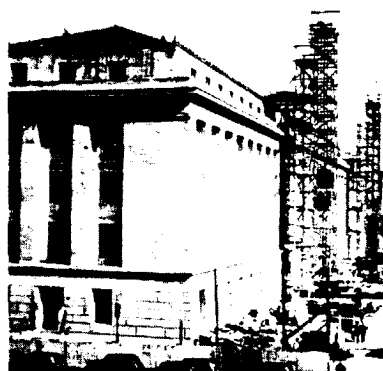
The calking compound provides an elastic adhesive seal for the joint, and "Weathercap", by shielding the compound against sunlight and air, completes a treatment which, after six years of tests and three years of extensive field installations, gives every evidence of being permanent.

The accompanying illustrations show typical joint conditions. One of the most striking is that at the top left hand of this page. This joint was re-calked three times in less than ten years. The fourth time, lead caps were used and today this joint is in perfect condition.

After exhaustive tests and consideration, lead was finally chosen as the metal from which to fashion "Weathercap". Lead, through its malleability, offers workability of the highest order.

The lead cap is easily cut to size on the job; its prong can be notched, permitting it to be bent easily around corners and it can be shaped to conform to the irregularities even of rough-cut masonry. Unaffected as lead is even by corrosive gases, it is absolutely permanent. Furthermore, it produces no ugly staining on masonry surfaces, but weathers rapidly to a soft neutral gray patina of long recognized beauty.

"Weathercap" was invented and is made by James E. Marble, of Delawanna, N. J., and is protected by United States and Canadian Patents. It is sold throughout the United States by the Minwax Company, Inc., of New York City.



Finance Building, Harrisburg, Pa., where 4,800 ft. of "Weathercaps" have been installed. Gehron and Ross, architects

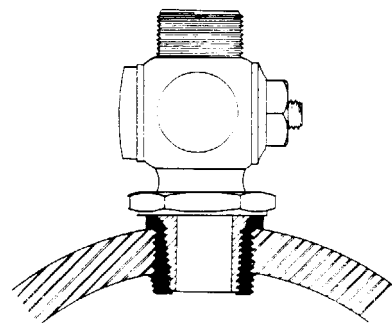
WEATHERCAP—A Permanent Masonry Joint Protection

Type	Size	Dimensions In Inches		
		W	D	To Cover Joints
A	2	9/16	5/16	Up to 3/8
	3	11/16	3/8	3/8 to 7/16
	4	1	7/16	1/2 to 3/4
B	2	3/8	5/16	Up to 5/16
	3	9/16	3/8	3/8 to 1/2
	4	3/4	7/16	1/2 to 5/8

Lead-Alloy Bushing Improves Water Main Tappings



A photograph and scale drawing of the Barrett lead-alloy Adaptor Bushing for taps on water mains
—WURTS BROS.



A NEW corporation cock having a lead-alloy adaptor bushing has been developed to obtain a better grip on thin-walled mains without the use of a saddle. In addition to the better grip, it has several other features which make it advantageous for both thick- and thin-walled mains.

In this device the brass corporation cock is made with the usual tapered threads. It fits into a lead-alloy bushing slightly smaller than the corporation cock, with tapered threads on the inside, but with straight external threads. The corporation cock is screwed by hand into the bushing until it fits snugly. Both are then screwed into the threads tapped into the main with a standard tapping

machine with straight thread taps. Because of the tight fit between cock and bushing, the latter enters the pipe wall up to the shoulder at its top. Then the tapered cock screws into the slightly smaller bushing all the way, compacting the softer metal of the bushing into the threads in the pipe wall and the corporation cock. This wedging action also forces the metal of the bushing to spread out a bit on the inside pipe wall and the shoulder of the bushing fits down snugly on the outer pipe wall.

It is easy to see what a strong tapping this makes. Furthermore, the lead alloy covering the pipe wall on inside and out prevents electrolysis between the main and the corporation

cock and covers the ferrous metal of the main at the points where the pipe coating is broken. Thus it also prevents the start of rusting at those points. Compacting of the bushing metal in the threads of the main and the corporation cock makes a permanently and absolutely watertight connection. Movement can be taken up by the bushing without leakage and without placing undue strain on the pipe or corporation cock. It can be seen that these advantages apply equally to thick- and thin-walled pipe.

This device is known as the Barrett "Adaptor-Bushing" and is made by The Cleveland Brass Manufacturing Co., Cleveland, O., with both long and short bushings.

Lead Bends and Vents in Seattle, Wash. Housing Project

LEAD bends and vents have been used for all water closet connections in the 304 living units of the Madison Park Housing Project at Seattle, Wash. The four-inch cast-iron stacks used were, of course, also calked with pure



Lead water closet and vent connection in the Madison Park Housing Project at Seattle, Wash.

SPECIFY SEAL OF LEAD INDUSTRIES' MATERIAL APPROVAL

calking lead. Located on the western shore of Lake Washington on the Lake Washington Canal, it is a \$1,200,000 development, constructed as a private enterprise with the aid of an F.H.A. insured mortgage and for rental to relatively low income families. It is planned to open this project to the public in January, 1939.

Flexible connections provided by lead bends prevent possible breakage of fixtures due to building vibration and settlement, or damage to the connection itself, both of which troubles may occur if rigid connections are used. Such damage not only may result in considerable expense, but in

unsanitary conditions as well. Furthermore, durable lead precludes corrosion leading to expense and unsanitary leakage, and, since lead offers a smooth inner bore free from obstructions, it permits the ready passage of soil.

In installation, too, lead has the advantage of sufficient flexibility to allow slight adjustments to be made should measurements be inexact. On a recent job at a leading university, a battery of three toilets was roughed-in with rigid bends. The marble setter made a slight error in erecting the partitions and the bends had to be torn out and replaced with lead in order that the necessary adjustments could be made. Lead bends used in the first place would have saved about \$75.

All these reasons have led city after

city to revise their ordinances to require lead connections.

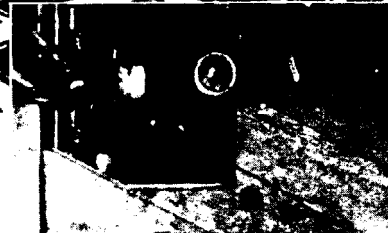
By specifying lead for plumbing, architects, engineers and contractors assure themselves of highest quality installations, and, furthermore, by insisting on the Lead Industries' Seal of Approval, they are assured of highest quality lead pipe, bends, traps and calking lead.

The Madison Park Housing Project was planned by Graham and Painter, architects. Contractors are Henrikson-Alstrom Construction Co., and University Plumbing and Heating Co. are the plumbing contractors.



ROGER DUDLEY

A general view of what the Madison Park Housing Project will look like when completed and, at right, looking down one of the stacks at the lead closet connections



Home Owner's Foresight Results in Using Lead Service

THE recent installation of a lead service at Stamford, Conn., is interesting, not only because it represents another example of this use of lead, but doubly so because, in this case, it was due to the foresight and investigation of the owner, himself, that lead was specified. Careful study into the merits of various service pipe materials fully demonstrated to this owner that the selection of lead pipe would be not only wise, but economical. It is interesting to consider the owner's personal reasons for this action.

"Naturally, when I first considered building a home, I felt it to be of great importance to investigate thoroughly the various materials used in building construction. The question of piping materials arose and is one with which,

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

from my own experience, the average home owner is not well acquainted. After inquiring concerning the various materials used in my own neighborhood and in various other parts of the country, I found that lead was the only material which had a long record of dependable service. Indeed, many of the lead services I found out about had been in use for 60 or more years. Since I could find no other service pipe material which could show this durability, lead seemed definitely to be indicated for my service. However, my investigation went still further and I found that lead resists corrosion better than other common

metals and that it does not clog or produce staining on bathroom or other fixtures, a feature of great importance to any home owner. Finally, lead showed itself to be economical not only in initial cost, but when I took into consideration its durability, the cost became negligible over its anticipated life of service."

Although it is unusual for a home owner to study so carefully the materials used in building, the advantages of lead services which this owner has reported are the same as those found by architects, water-works engineers and others throughout the country. Years of experience have proved lead services to be durable, efficient and economical, completely satisfying home owners and increasing good will for those specifying lead.



Tapping the water main at Stamford, Conn., and the Seal of Approval lead service which was insisted upon by the owner

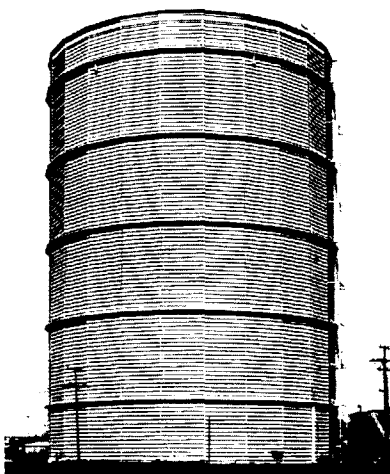
—DAYTON SNYDER



Pure White Lead and Oil Provides Durable Tank Painting

A STRIKING example of the adaptability of pure white lead and oil paint for metal surfaces is afforded by the recent repainting of the large steel gas tank shown in the accompanying photograph. This tank, owned by the Pacific Gas and Electric Co., is situated at Oakland, Cal., and is 303 ft. in height with a capacity of 10,000,000 cu. ft.

The last painting of the gas tank was in 1930, at which time the steel exterior was finished with pure white lead and oil. Two or three months ago, when this was inspected prior to repainting it, it was found that the surface, after eight years of service, was in excellent condition for repainting, a fine testimonial to the superiority of white lead paint. The repainting was then done by spot-coating with



—GEORGE F. INGHAM
Steel gas tank at Oakland, Cal., effectively painted with pure white lead and oil

red lead and finishing the whole tank with white lead and oil, tinted gray.

Both pure red lead and white lead and oil are excellent materials for painting metal surfaces. Although red lead is more universally employed as a primer than white lead, the latter has found wide application for the finishing coats when a light color, unobtainable with red lead, is desired. A further advantage of using a light-colored finish coat is in the high heat and light reflection that is provided, factors of great importance in many cases. The steel gas tank described above is but one example of the excellent durability and service of these paints.

The repainting on this tank was done by the Aristo Painting Co., of San Francisco, Cal.

Tacoma Hospital Demonstrates Advantages of Lead Plumbing

IN 1914, the first unit of St. Joseph Hospital, in Tacoma, Wash., was built. This was followed by a large new section erected in 1927. Lead and cast iron were used in the plumbing of the new part after 13 years' experience with a different type of plumbing system in the old unit. According to recent information received from Harry Eagles, chief engineer of the hospital, the cast-iron and lead system has given absolutely no trouble, but the maintenance cost on the other system amounts to approximately \$100 per month.

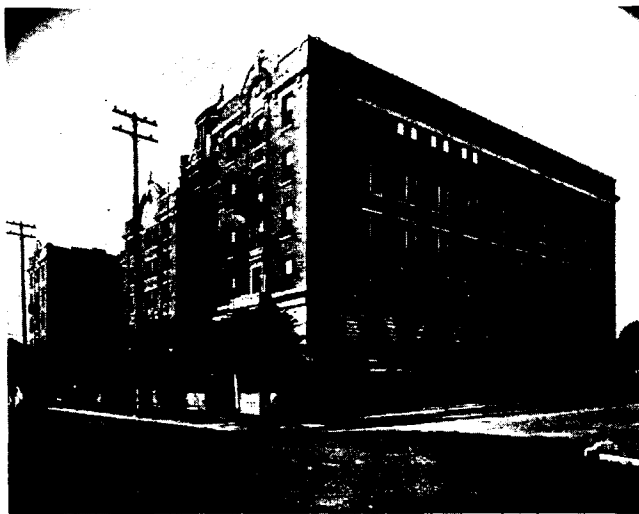
Low maintenance cost is naturally vital to hospitals, perhaps even more than in private homes or business buildings, since it is essential to use as large a proportion of available funds as possible for care of the sick. Another important factor, however, is that

trouble in the plumbing system of a hospital may cause serious inconvenience and even danger. Says *Hospital News*, publication of St. Joseph Hospital, "It is highly important that the mechanical equipment be given careful consideration in all classes of build-

ings where the welfare and comfort of the patients and the smooth functioning of the organization is dependent on perfect and uninterrupted operation of the various mechanical systems." *Hospital News* goes on to list the systems included as "mechanical" and first of these is plumbing.

Lead and cast iron, because they are durable and make a flexible installation, always mean low maintenance costs. Combined with the relative freedom from clogging of lead and cast-iron systems, they also mean freedom from trouble, a factor of importance in hospital and all other plumbing installations.

Roy E. Thompson of Tacoma was plumbing contractor for the new wing of St. Joseph Hospital, which was designed by Phillip A. Baillargeon.



—ASSOC. PHOTO SERVICE
A general view of the St. Joseph Hospital, Tacoma, Wash., whose plumbing demonstrates the superiority of lead

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