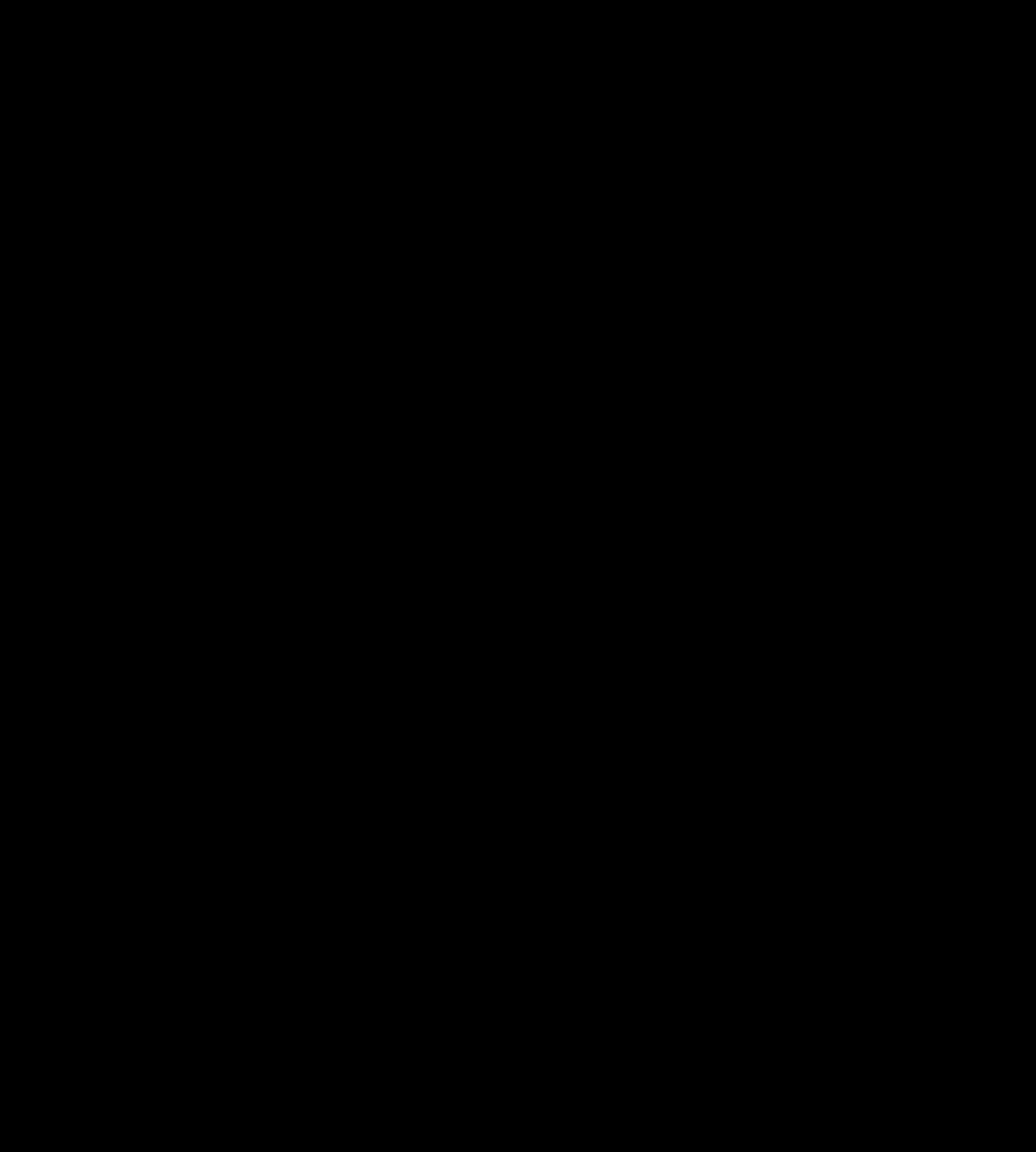




Drip-Cap Flashings Made of Sheet Lead

ARTISTIC design of lead drip-cap flashings for doors and windows combines decorativeness with practicability in the Larchmont, N. Y., home pictured in the illustrations. A simple scalloped edge, 4 in. deep, provides the ornamental embellishment for these attractive flashings. Also featured are lead "umbrella" roofs over the front and the rear veranda doors. These roofs, made of sheet lead with loose-locked standing seams and fitted with over-hanging drip-caps, are in perfect harmony with the style and design of the house.

The importance of flashing to prevent leaks on roofs, chimneys and vents is widely recognized. However, its importance on doors and windows is often overlooked, yet these are also places where leaks frequently develop. Tiny separations allow rain and moisture to seep inside houses, often resulting in streaky wall-paper, falling plaster and ruined painting. Since true costs should be reckoned on a long term basis, such leaks, causing unwarranted expenditure, must be avoided if the home owner desires economy. Original costs do not necessarily indicate economy.

Although types of construction, sizes and building materials are im-



GOTTSCHE

Lead roof with ornamented drip, and garage-door flashing showing the same treatment.

View of the rear terrace with a lead "umbrella" roof and ornamented drip over the doorway.

GOTTSCHE



portant factors in determining the proper method of installing lead flashing, several prerequisites should be observed. Flashings over doors and windows should be secured around the edges in such manner that expansion and contraction resulting from temperature changes will not be impeded. For instance, they may be fastened by loose-locking to continuous cleats nailed to the woodwork; the flashing itself, however, should not be nailed around the edge except when very small. Long runs should be in pieces not more than 8 ft. long, loose-locked together. Also, loose-locks paralleling the wall should be provided where large exposed flashings enter the wall. For these uses 3 lb. hard lead or 4 lb. soft lead should be used.

Lead is ideal for flashings; it is easily worked and formed into a wide variety of shapes and designs, appreciably broadening the architect's scope of decorative possibilities. Resistance to corrosion makes it durable and efficient. Lead does not stain adjacent masonry or paint, but weathers to a beautiful patina which, highly ad-



Another home designed by Mr. Gehron showing a lead drip over the window and a lead lighting fixture for the front entry.

mired through centuries, blends splendidly with all building materials. Furthermore, it may surprise many architects to know that in the last few years the price of hard lead for roofing and flashing has been reduced so much in relation to other materials that these advantages are attainable at virtually no extra cost.

Mr. William Gehron of New York, was the architect in charge of the design and specifications of this house, and has used this method of flashing as standard practice on many of the fine homes he has designed. Mr. Gehron fully appreciates the vast possibilities present in ornamental leadwork, not only for the expensive mansion, but for the small home as well.

Lead-Lined Sink for Amateur Photography

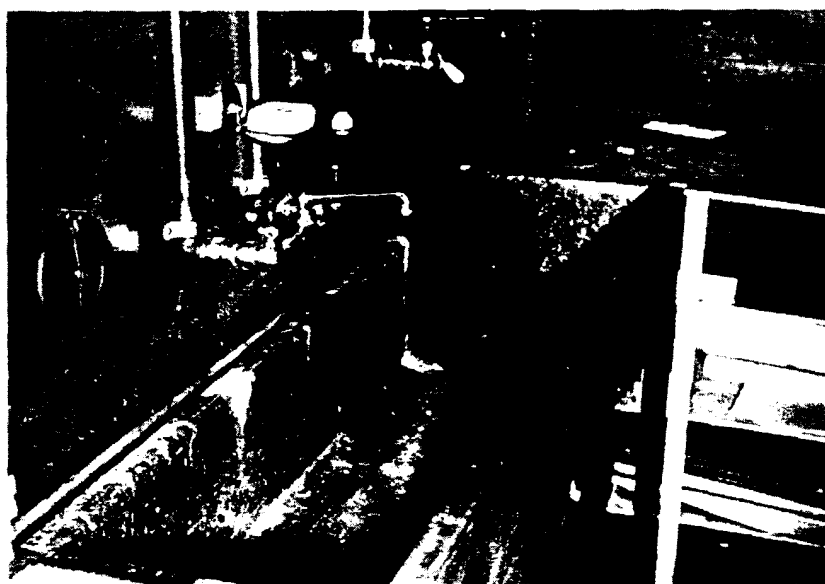
LEAD furnishes an economical and efficient solution to one of the important problems that has arisen from the marked increase in amateur photography throughout the nation—that of providing a safe and durable drainage system for the corrosive chemical solutions used for developing and printing photographs.

Indicative of lead's service to this national hobby is the lead-lined sink shown in the illustration, which has been installed in a home at Grosse Pointe Farms, a suburb of Detroit, Mich. The sink is 10 in. deep, 15 in. wide, and 5 ft. long, built of wood and completely lined on the inside with 8 lb. chemical lead. The sheet lead is carefully fitted to the sink and folded over the wooden bead at the top. The lining is cut from a single sheet of lead so that the only joints necessary are short ones "burned" near each corner. Thus, only a homogenous surface of lead will be presented to the corrosive solutions. Further protection is gained by the use of a lead trap and pipe to carry off the waste liquids. Thus, this amateur photographer is assured that the chemical solutions which corrode ordinary sinks and

pipes will be discharged without damage. Furthermore this same protection may be obtained in school, commercial, industrial, or any photographic laboratory whatsoever.

Durable, easy to apply, and highly resistant to corrosion by many of our most common chemicals in use today,

lead is of great assistance to architects and engineers in the design of laboratory and industrial equipment. Lead pipe, lead-lined tanks, and other receptacles permit the handling, storage and transportation of such corrosive chemicals safely and economically.



View showing lead-lined sink for corrosive liquids used in amateur photography.



A SPLENDID example of the wisdom of the Douglas Fir Plywood Association's painting specifications is afforded by the home shown in the accompanying photographs. This house, built of plywood in 1930, was painted at that time with pure lead and oil and has had no repainting or retouching since then. The interior walls were given a stippled finish, the lead and oil being tinted to harmonizing and attractive shades and colors. Today, according to the owner, the painting is in remarkable condition, still retaining its original freshness and lustre. All the interior walls have been washed at least once a year, the kitchen being so treated on an average of two to three times a year, since

walls and ceilings painted with pure lead and oil need only to be washed to retain their original cleanliness and attractiveness. This quality alone is a strong recommendation for the use of lead paints, whose other characteristics of durability, economy, and beauty have brought this paint wide recognition and favor.

Indeed, in their recently adopted standards for painting plywood, the Douglas Fir Plywood Association, fully aware of the relationship of proper painting with the rapidly expanding use of plywood in building construction, has recommended that pure white lead paint shall be used on plywood interiors. In their leaflet "Specifications and Suggestions for



Plywood Home Sh White I

Plywood Association
ends Pu

Two views, on left, showing exterior and bedroom of home, walls and ceilings being plywood painted with white lead.

FIG. 1
1930

SPECIFICATIONS: FOR INTERIOR PAINTING ON 1
New Douglas Fir Plywood in interiors shall be painted with the following formulas:

	Formula A	Formula B
Priming Coat	100 lb.	100 lb.
All Purpose Soft Paste White Lead	100 lb.	100 lb.
Raw Linseed Oil	3 gal.	3 gal.
Turpentine	2 1/4 gal.	2 1/4 gal.
Flatting Oil, Lead Mixing Oil or Lead Reducing Oil	2 1/2 gal.	2 1/2 gal.
Floor Varnish		
Liquid Drier	1 pt.	1 pt.
Gallons of Paint	8 1/2	8 1/2
Coverage per Gallon (approximate Square Feet)	700	800

* Either formula A or B may be used, depending on personal preference of the decorator.

Interior Paint Decoration on Douglas Fir Plywood." the accompanying formulas are recommended for new interior painting.

Unsurpassed in beauty and durability, white lead is a superior medium for the wide variety of decorative treatments which are integral parts of the competent decorator's repertoire. With careful application by skilled painters, the field of artistic effects thus obtained is unbounded. Furthermore, the wide range of shades and colors to which white lead may be tinted is practically unlimited and appreciably broadens the architect's and decorator's scope of enhancing and harmonizing color combinations.

White lead not only produces super-

Show White Lead Durability

tion ends Pure White Lead

Living room and front stairway of this home, which was painted entirely with pure white lead and oil, shown in views on the right.



TERING ON DOUGLAS FIR PLYWOOD
shall past three coats of paint mixed according to the

Priming Coat	Flat Finishing Coat			Semi-Gloss Finishing Coat	
	B*	A*	B*	A*	B*
100 lb.	100 lb.	100 lb.	100 lb.	100 lb.	100 lb.
3 gal.					
1 1/4 gal.		1 3/4 gal.		3/4 gal.	
	2 1/2 gal.		2 1/2 gal.		2 gal.
		1 pt.		1 1/4 gal.	1 gal.
1 pt.		1/2 pt.		1/2 pt.	
8 1/2	5 1/2	5	5 1/2	5 1/4	6
700	800	800	800	800	800

used depending upon availability of materials and

Many other decorative finishes, such as crumpled roll, sponge mottle, glazes, and designs done with masking tape and stencils further enhance the beauty of white-lead-painted plywood interiors.

Capable decorators are well able to style home interiors in these finishes as well as in many others of more intricate design. Relief work may be attained that is delicate and unusual, providing depth and texture to interior walls. Such effects are best obtained by using white lead plastic paint.

Economical and beautiful, interior walls of plywood, painted with white lead in accordance with the Douglas Fir Plywood Specifications, give lasting satisfaction and service. A special

advantage of plywood is that no water is involved in the construction. Plywood walls are "dry-built": they may be painted immediately after installation saving time and trouble. Furthermore, this dry-built feature affords protection for the painting. Moisture in plaster walls may be a source of paint failures, both for interiors and exteriors. The use of plywood eliminates this cause of trouble.

In conclusion the combination of characteristics common to both materials, durability, attractiveness, ease of application and serviceability, all contribute in making them well suited for interior finishes, for which they are being used more and more in new and remodeled houses.

relative attractiveness on plywood interiors by virtue of its tinting possibilities, but may also serve as the basis for many decorative treatments and paint stylings that add charm and beauty to interior painting, as further brought out by the Douglas Fir Plywood Painting Leaflet.

One of the simplest and yet most satisfactory of these techniques is known as stippling. This treatment, producing a delightful pebbly texture, is accomplished by striking a wet, freshly painted surface with a wall stippling brush. The resultant finish is not only beautiful and gratifying, but, for the sake of practicability, has the added advantage of eliminating brush marks on the painted surface.



Small Applications of Lead

(Editor's Note: For hundreds of years, lead, in one way or another, has made invaluable contributions to the nations of the world. Today, in almost every known industry, lead is found to occupy a prominent and useful position furthering in a marked degree our forward progress toward comfort, security, and a higher standard of living.)

The small uses of lead to be shown in this column from time to time are indicative of lead's versatility and are brought forth with the desire to show, through unique and interesting applications, some of the natural characteristics of lead that have made the metal one of the most valued in the world.)

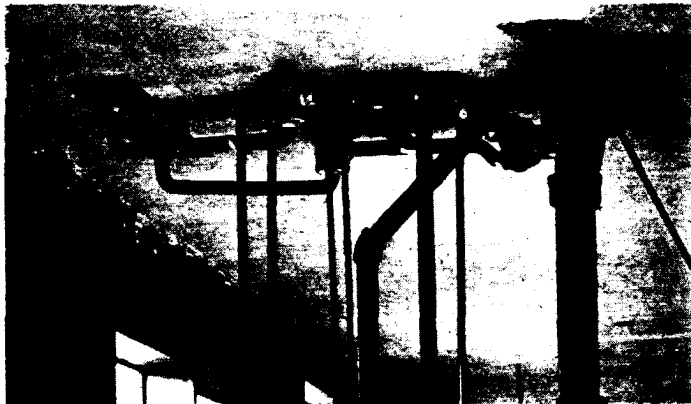
THE unusual Christmas card pictured in the photograph, conveying best wishes for the past season,

shows an ingenious application of lead in which this metal's malleability and working ease were of great advantage. The card, pale Christmas green with holly-red ribbon imprinted on the front and the Season's message on the inside, has two tiny lead bells, hand-hammered to almost foil thinness, delineating in exact detail the outline of the clapper and other parts of the bell. Snow-flakes, done with white paint, are portrayed falling around the bells, and, in order to complete the picture, there is another lead bell on the inside of the folded card.



This malleability of lead is of major importance in many of our large industries. Lead tubes, foil, hand-hammered ornamental leadwork, and many other applications of lead all owe their serviceability and adaptability in great part to this.

Sheet Lead, Pipe, and Fittings in Housing Project Plumbing



COURTESY U. A. OF JOURNEYMEN PLUMBERS
A detail of lead work suspended under a first floor ceiling of the Omaha Project.

OVER 42,000 lb. of lead have been used in the plumbing installations of the Logan Fontanelle Homes, 15 acre slum clearance project, Omaha, Neb. This development, sponsored by the Omaha Housing Au-

thority, was constructed with the aid of Federal Funds, and consists of one- and two-story group houses and two-story flats, containing 284 living units with a total of 1,114 rooms. The dwellings range from three to five and one-

half rooms, with many spacious play areas and lawns.

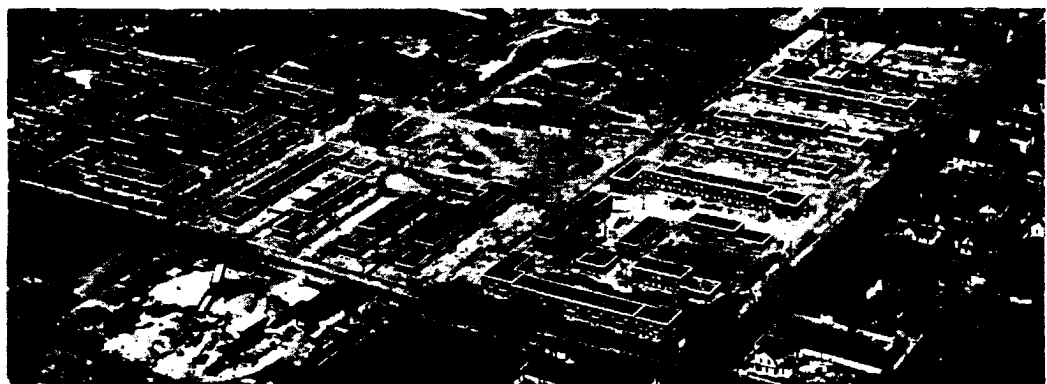
The Government specified that plumbing should be installed in accordance with the Omaha code. Lead and cast iron were used throughout for the soil and waste systems. In addition to the lead plumbing, 4,650 lb. of 6 lb. sheet lead were used for roof flashings and shower pans. Bends and drum traps were of lead.

Logan Fontanelle Homes adds one more example to the ever-increasing list of representative buildings of all types in which lead is used to great advantage for plumbing and sheet metal work.

People are indeed fortunate in those cities where the plumbing codes are steadfast in specifying lead. Durable, flexible, easy to install, and economical lead may always be relied upon for trouble-free installations.

COURTESY U. S. HOUSING AUTHORITY

Air view of Logan Fontanelle Homes, Omaha, Neb., where lead was used extensively in the plumbing installations.



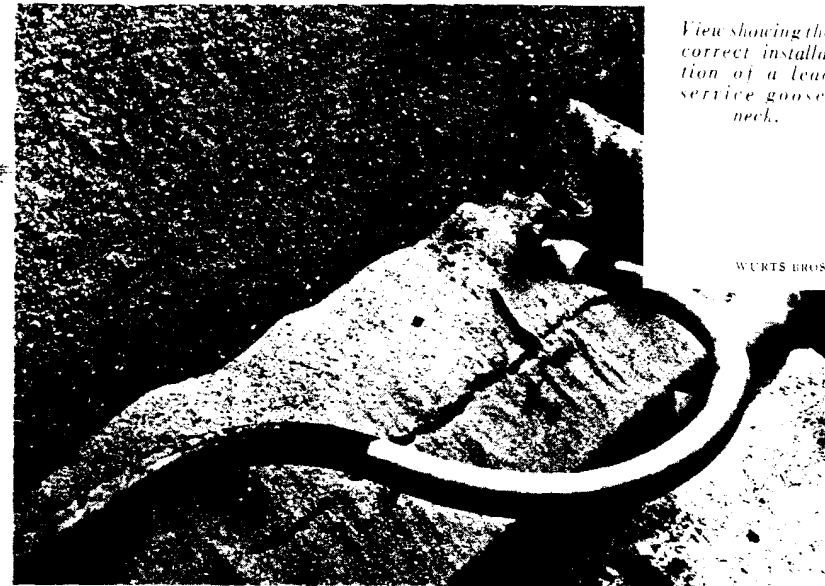
Correct Installation of Goosenecks on Lead Services

CONDITIONS under which modern water services must perform have grown ever more rigorous. Expensive pavements, heavier traffic, more excavations and filled ground, more pipes and obstacles in the ground, and other factors require thick-walled, durable, flexible pipe, a combination of characteristics found only in lead water services. By adhering to a few sound principles of installation the fullest advantage may be taken of lead services and they will give maximum performance, providing the water works official with lowest annual cost for services. These principles will be reviewed in this series of articles.

Provision of an adequate gooseneck at the corporation cock is one of the most important steps. A corporation cock with a tail piece bent at 90 deg. so that it parallels the main, should be used. This helps, when the service is attached to it, to provide an adequate gooseneck, by starting the pipe in the right direction at right angles to the line of the service. The accompanying table gives the approximate amount of pipe to be used in forming the gooseneck and the distance in a straight line from the tail piece of the corporation cock to the point at which the service straightens out.

More pipe is necessary in goosenecks in large size pipe or pipe with thicker walls to prevent thinning the walls on the outside of the bend or distortion of the pipe.

The finished gooseneck should form a question mark with the curvature of both parts of the reverse curve about the same. Bends in lead pipe should not be sharp and if the dimensions



given are roughly followed the bends will be sufficiently gradual. The gooseneck should lie to the right of the tapping when facing the main because there is less chance of the main settling than of the gooseneck, and in the latter case settlement would tend to tighten the union at the cock instead of loosening it. The gooseneck should lie horizontal so it will not act as a trap if the pipe is drained, and also in this position it will more readily adjust itself to settlement.

When tappings are made in the top of the main the same type corporation cock with bent tail piece is used and the gooseneck also lies horizontal starting parallel with the top of the main and a few inches above it. Tappings like this should be avoided if possible, but if they must be made,

blocking should be placed between the main and section of gooseneck above it just beyond the joint. This will relieve strain on the joint and coupling and allow it to be taken up in the gooseneck.

It is sometimes advisable to provide a gooseneck just outside the foundation wall of the building. This is particularly true if services are long, say 100 ft. or more, or if settlement is liable to be excessive. This gooseneck as a rule need not be as large as the one at the main but may simply be a slight, gradual curvature before the pipe enters the wall.

In rolling out from the coil long services or services in bad ground, they may be left slightly wavy, which will take up settlement all along the line. Care should be taken to see that these waves lie horizontal to avoid trapping.

One of the great advantages of lead services is that goosenecks are made integral with the pipe, no joint being required to connect the gooseneck and the remainder of the service since the flexibility of lead permits bending the service as required. Because lead is inelastic, it is not under stress after movement, a fact which aids in prolonging its life since metals under stress are more apt to corrode.

GOOSENECK SIZES

Inside Diameter of Pipe	AA (XS)		AAA (XNS)	
	Length of Pipe in Gooseneck	Straight Length of Gooseneck	Length of Pipe in Gooseneck	Straight Length of Gooseneck
Up to and including 1 in.	2 ft.	1 1/4 ft.	2 1/2 ft.	1 1/2 ft.
1 1/4 in.	2 1/2 ft.	1 1/2 ft.	3 ft.	1 7/8 ft.
1 1/2 in.	3 ft.	1 7/8 ft.	4 ft.	2 1/2 ft.
2 in.	4 ft.	2 1/2 ft.	6 ft.	3 3/4 ft.

Table giving the approximate amount of pipe used for goosenecks.

Lead Calking for Spartanburg, S. C., Water Project

THE new water line at Spartanburg S. C., is but another example of how lead calked joints are relied upon to insure dependability and durability in pipe lines. The 1937 and 1938 projects of the Spartanburg Water Works include the laying of 4,000 ft. of 6 in. pipe, 2,000 ft. of 8 in. pipe, 600 ft. of 10 in. pipe, and 10,000 ft. of 12 in. pipe, in the manner indicated by the accompanying photographs. This operation is facilitated by lowering the pipe with a derrick from a truck running parallel to the ditch, each length being abutted to the preceding length as it is lowered. To pack the earth solidly, water is used as an aid in filling under the pipe and in back-filling the trench. A 3 ft. cover is employed. All joints are calked with lead, the work being supervised by Mr. R. B. Simms, superintendent of



Lowering a cast-iron water main into place by derrick.

water works, who is steadfast in his opinion that "there is nothing so serviceable as lead for calking."

The importance of water-tight joints in this pipe line can not be over-emphasized. Designed to provide increased fire service for Spartanburg, there must be no danger of joint failures to disrupt such a service. Therefore, all joints must be calked with lead.

Lead joints are flexible, allowing the pipe to adjust itself to ground settlement and to withstand traffic movement without undue strain. Such strain is the cause of pipe fractures and joint failures when rigid jointing compounds are used. In addition, the durability of lead joints is beyond question and is further reason why lead calked joints have been standard for many years.



Pouring the calking lead for a cast-iron joint.



Bringing the pipe in to place with the aid of the derrick. The truck moves slowly parallel to the pipe.

View showing the joint with the pouring of the lead completed and ready to be calked.



PHOTOS BY ALFRED T. WILLIS

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