New Jersey Master Plumbers Ask for More Lead in Codes

THE New Jersey State Association of Master Plumbers took definite action to bring back more lead work to plumbing by passage of the following resolution at their annual convention at Atlantic City in May:

Whereas, through standardization and simplification of connective devices in the plumbing field there has been a constant tendency to introduce and use threaded connections and unions requiring little technical ability beyond a strong arm and a wrench, thus lessening the knowledge and mechanical requirements for craftsmanship, and

Whereas the use of such devices has encouraged the employment of cheaper kinds of pipe and materials despite the known fact of their relatively short life when compared with lead which has been the plumbers' material since ancient days, to the detriment of the property owner in the lack of trouble-free permanence of plumbing pipes and connections such as was his in the days of lead waste and round wiped solder plumbers' joints; now therefore be it

Resolved by the New Jersey State Master Plumbers Association in Annual Meeting assembled at Atlantic City (N. J.) this 20th day of May, 1933, that it is to the best interests of the property owner to have a plumbing system properly designed and installed with fixed connections and branch wastes and vents and with water services and water supplies of standard lead waste or water pipe of weights suitable for the several purposes, such pipe to be installed by journeymen plumbers skilled in the art of installing and connecting by means of round wiped plumbers' joints; and to that end be it further

Resolved that copies of this resolution be placed in the hands of every member of this organization with request that the purpose of it be brought to the attention of the proper authorities in their several jurisdictions, to the end that the use of lead rough work and water supply be increased as rapidly and to as great an extent as may be possible.

And Be It Further Resolved that the incoming Executive Board and Zone Committees advance this resolution at their zone meetings.

Need for this action was admirably brought out by Mr. James T. Brennan of Jersey City in an illuminating speech in which he clearly showed how the plumber had lost business by his defection from lead work and at the same time how the good of the homeowner had been sacrificed by the use of inferior materials installed by less capable workmen. Mr. Brennan's talk struck a very responsive chord and after much favorable discussion at the meeting, his views were offered in the form of the resolution.

White Lead for 149 Years—Not a Shingle Replaced

SPEAKING of the First Presbyterian Church of Huntington, Long Island, N. Y., which was founded in 1658 and whose present edifice was erected in 1784, the *New York Herald Tribune* states, "When the church was first painted it was covered with pure white lead and linseed oil; this tradition has been faithfully observed in the passing years." The paper also says, "The church proper, with its arresting tower showing the influence of Sir Christopher Wren, stands today as when first completed. Not one of its hand rived shingles of enduring cypress, which were used in lieu of clapboards, has been replaced." Certainly white lead paint, which has protected this structure for 149 years, deserves much credit for its present excellent condition and the absence of repairs to the shingled walls.

WURTS BROS.

Tablet on the First Presbyterian Church at Huntington

This church marked its 275th anniversary in June with a three-day celebration and pageant based on

the eventful history of the church and community. The original building was razed by the Redcoats during the Revolution and the timbers used to build a fort. The architect for the present attractive structure is unknown, but he built pleasingly and well, and founded a painting tradition that could be relied upon to make his work endure.

FORMULAE FOR REPAINTING OUTSIDE WOOD

	Priming Coat	*Second Coat*
Soft paste white lead	100 lb.	100 lb.
Pure linseed oil	2 gal.	3 gal.
Pure turpentine	1¾ gal.	.....
Pure drier*	1 pt.	1 pt.
Gallons of paint	7 gal.	6½ gal.
Coverage, one coat	5600 sq. ft.	5000 sq. ft.

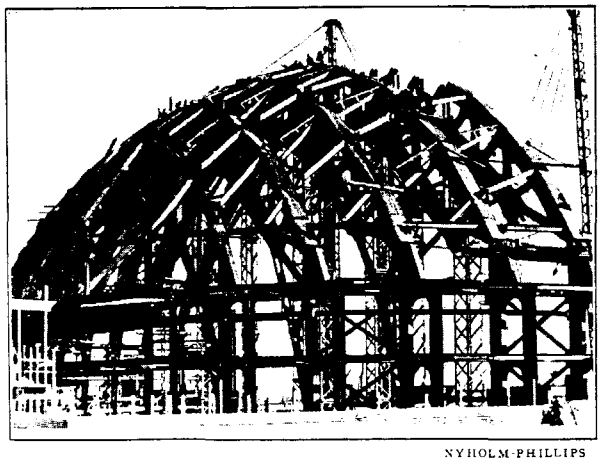
* When boiled oil is used, reduce drier to ½ pint.

Blue Lead Paint Protects Cincinnati Terminal Steel

BLUE lead paint has been used for undercoats on all the painted steel work in the magnificent new $6,000,000 Cincinnati Union Terminal. This terminal, recently opened, takes its place as one of the largest and finest in the entire world, and into its construction have gone the finest materials. Paint used in connection with railroads is subjected to extremely hard service. Firmly adherent, rust inhibitive blue lead paint will assure excellent protection for this new terminal's steel.

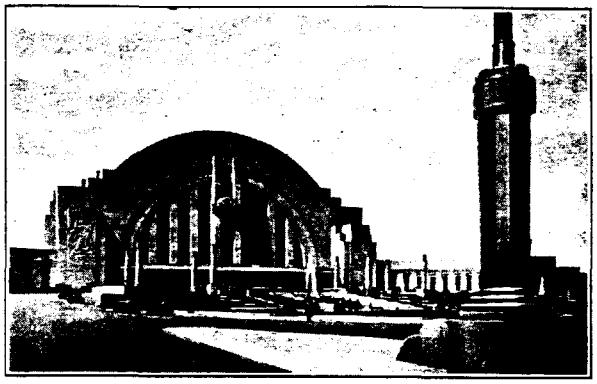
In the terminal proper both the steel encased in brick and the exposed steel were given a coat of blue lead paint in the field. The steel work of the train sheds received both a priming coat and a field coat of blue lead paint, while the power house steel received one coat of blue lead paint. Both spraying and brushing were used to apply the paint.

Mr. Walter Reader, who had the contract for all the field painting of the steel, expressed extreme satisfaction with the paint because it worked and covered so well. Blue lead paint (also known as sublimed blue lead or blue basic lead sulphate) is a highly rust inhibitive paint and in common with all lead paints, it makes a tough, elastic paint film that does not crack or peel. It stays in suspension well and, being very fine, works easily. Blue lead paint has a pleasing blue gray color that may be tinted to other attractive shades. It is available either as paste or ready mixed paint.



NYHOLM-PHILLIPS

Steel work of Cincinnati terminal protected by blue lead paint



NYHOLM-PHILLIPS

New Union Terminal, Cincinnati, Ohio

The following formulae are recommended for blue lead paint:

	First or Intermediate Coats	*Top or Finishing Coats*
Blue lead in oil, paste	100 lb.	100 lb.
Raw linseed oil	2⅜ gal.	3 gal.
Turpentine or paint and varnish manufacturer's 48° to 50° naphtha	1¾ gal.	2 qt.
Drier (rosin free)	1 qt.	1 qt.
Approximate paint produced	7¼ gal.	6⅔ gal.
Weight per gallon, approximately	17.8 lb.	18½ to 19½ lb.

Missouri Returns to Lead Paints

AFTER trying metallic pigment paints for several years on highway bridges, the Missouri State Highway Commission has returned to the use of lead paints. Safety was one of the important factors influencing this decision, for it has recently been clearly shown that white lead paint is more visible at night than metallic paints. This point, together with conclusive evidence, was discussed in LEAD, July, 1932. In addition the lead paints have long been standard for painting structural steel and their superior durability and the unexcelled protection they provide is widely recognized.

Many Homes Demonstrate that Long Life

Last painted in 1927 with pure white lead

All of the houses illustrated on
lead paint in the year shown und
ed since. The houses are located
suburbs of New York City. Th
unretouched and show the excel
tion still afforded, and perfect
exposure conditions in an atmo
district and subject

SEVEN houses painted with pure white lead paint from five to nine years ago, without need of repainting in the interval, are pictured on these pages. One was painted in 1924 or 1925, three in 1925, two in 1927 and one in 1928, all by the same contractor. None has been repainted as yet and the photographs show their appearance in May of this year. In the case of the oldest job, that done in 1924 or 1925, the owner states the paint is still excellent in condition and appearance.

This is certainly a powerful testimonial for both contractor and the paint used. It indicates that the excellent results often claimed for white lead are not merely rare exceptions when the paint is applied by a capable painter. Naturally the best of materials improperly used can not be relied upon to give such excellent results, but a building owner who engages the services of a reliable painter who uses pure white lead paint stands slight or no risk of going wrong.

Last painted in 1925 with pure white lead

Last pain

Last painted in 1927 with pure white lead

And how little good painting has cost the owners of these houses if the cost is spread e[illegible] the years of service and protection of white lead! In addition when these houses do need repainting it will not be necessary to burn or scrape off old, peeling paint—a laborious operation — for white lead wears down

...ple Rule for White Lead Paint Well Applied

...ges were painted with pure white ...nder picture and have not been repaint... ...d in Orange and Verona, New Jersey, The...ographs, taken in May, 1933, are ...ell...dition of the paint, ample protec... ...t ... for repainting, despite rigorous ...os... of salt air close to a great industrial ... t... temperature variations.

Last painted in 1928 with pure white lead

...ted in 1925 with ...e lead

Last painted in 1925 with pure white lead

evenly by gradual chalking, leaving a perfect surface for repainting. Moreover, because the old paint does not have to be removed the chances are that one less repaint coat will be required, all of which means that repainting with white lead is a much less expensive proposition.

The real cost of painting is not simply its cost per gallon of paint. Into the true cost must be figured the life of the job and the cost of the preparations needed for repainting. Figured in this way cheap paint may often cost several times as much as good paint because it will fail rapidly by cracking or peeling and must be removed to repaint. Also the cost of paint on any job is usually only about 20 to 25 per cent of the entire cost of the job, the balance going for labor. Unwise economizing on that small portion of a paint job may cause heavy expense in the near future.

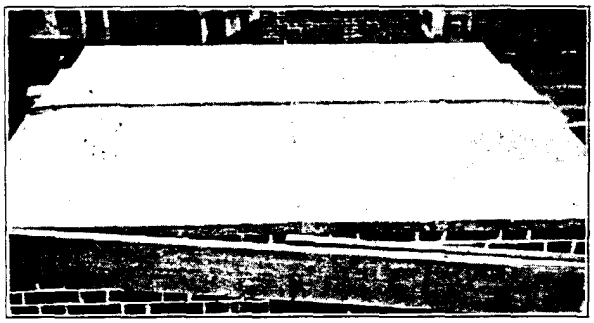
What good workmanship and good material has meant to the contractor who painted these houses is best indicated by the fact that he is one of the busiest in his locality, with six crews constantly at work. He has no fault to find with business because his old jobs bring him new customers and bring the old ones back.

Last painted in 1925 with pure white lead

Lead Rain-Water Collectors on College Building

AN extensive lead installation for catching and handling rain-water is included in the new Science Laboratory at Radcliffe College, Cambridge, Mass. Rain-water is necessary because distilled water is used in the laboratory. Lead was selected for the system because it can not rust and is highly resistant to corrosion by water and the elements.

A number of false chimneys to catch the rain dot the roof of the building. Each of these is covered with 6 lb. lead containing 3 per cent of antimony which virtually doubles its strength. The lead covers have vents which allow the passage of the water. Locked standing seams in the lead allow for expansion and contraction. A number of inserts were installed around the edges of the chimneys when they were built up, and the sheet lead was fastened to these by bolts, rustproofed by the Udylite Process.

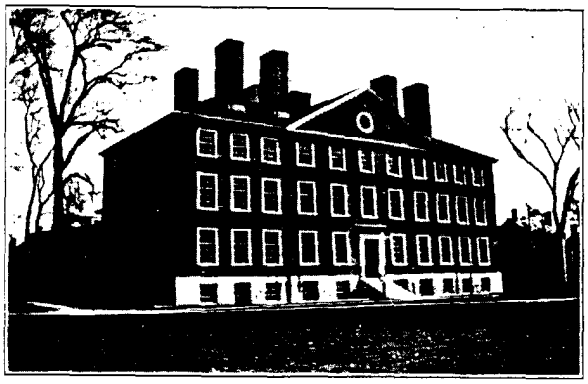


A sheet lead covered false chimney, showing standing seams

Bolt heads were covered with lead patches burned to the sheet lead chimney coverings.

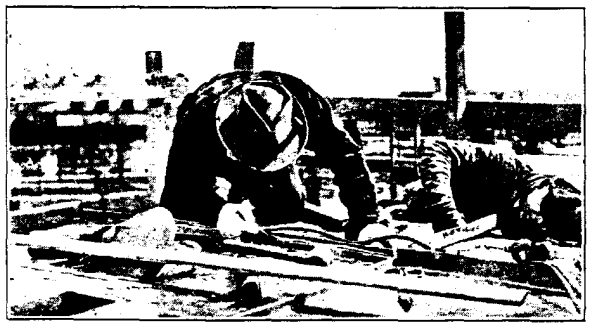
Inside the building directly under the chimney are 36 antimonial lead pans which catch the water. They also act as catch basins and strainers for leaves or other debris that may enter through the chimneys. From these pans the water is transported to several central collection boxes and from these boxes it is drawn to the laboratory sinks as required. About three tons of antimonial lead were required for the chimneys and about the same amount for the interior.

Two lead covered chimneys with rain-water vents



Science Laboratory, Radcliffe College, Cambridge, Mass.

Coolidge & Carlson of Boston were the architects, the Morton C. Tuttle Co., also of Boston, engineers and contractors, while the entire lead installation was handled by the New England Lead Burning Co. of Cambridge, Mass.



Installing sheet lead, showing "burning" or welding in process

Poughkeepsie Requires Lead Services Laid by Plumber

POUGHKEEPSIE, N. Y., which has found it so satisfactory to protect its home owners and plumbers by requiring the use of lead pipe for wastes under bathroom floors, also depends upon the same reliable material for all water services 1½ in. and under in size. The plumbing code provides that all services of these sizes east of Washington Street be AA lead pipe (extra strong) and all west of the same street be AAA lead (extra extra strong). Higher water pressures west of the dividing thoroughfare

make the difference in weight of lead pipe advisable. Recognition of the proper way to use lead pipe, using the correct weight for different pressures, is essential to obtain maximum service from this useful material. Other municipalities where water pressures are high would do well to be sure that the correct weight of lead pipe is being used. This has been simplified by revision of lead pipe standard weights brought about by the Lead Industries Association last year so that each weight of lead pipe, regardless of size, will stand the same pressure with adequate safety factor. The revision and its reasons are fully explained in the Association's booklet "Lead Pipe" and in LEAD, March, 1932.

In Poughkeepsie, service pipes are laid by the plumbers and all joints are wiped. This assures the home owner of a reliable service connection because of the great durability of lead pipe when buried in the ground and because the work is done by competent workmen. Great savings are effected by using lead pipe for this exacting service for it means eliminating practically all maintenance charges, as well as annoying interruptions to the water supply. The wall thickness of lead pipe, greater than that of other service pipes, is an added assurance of long life, while its flexibility permits ready adjustment to ground settlement without injury, and elimination of many joints.

Lead 15 Centuries Old Under Stone Columns

IN old Stamboul, which was once Byzantium and is now Istanbul or Constantinople, some lead more than 1500 years old is used in much the same way as one of its modern architectural applications. In the ruins of Theodosius I's famous Palace of the Seven Towers, built in 390 A.D. to commemorate the suppression of Klemens Maxim's revolution, are two great stone columns flanking the entrance gate known as the Golden Door, and layers of lead support the columns on stone footings.

The columns are two feet thick and about twenty-five feet high, while the layer of lead is approximately ½ inch thick. Doubtless this lead was installed for much the same reasons it would be used today. It provides a firm, even set for the columns, taking up any irregularities in the stone. It also has enough give to prevent spalling of the stone, and yet is strong enough to support these massive columns for fifteen centuries. The modern counterparts of this application are lead pressure-relieving joints, lead wool calked joints in stone, and wedge lead used in stone setting.

Detail at the base of one column showing lead on which column has rested for more than 1500 years

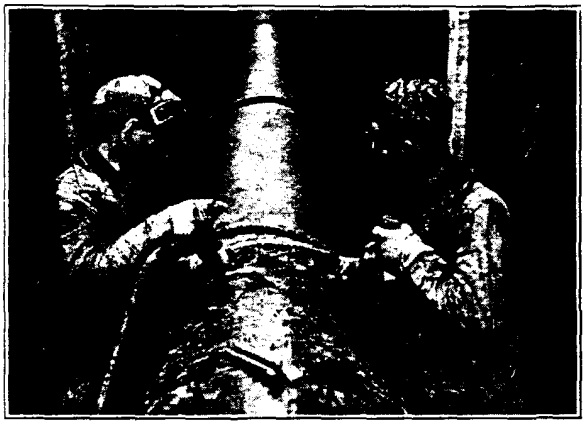
The Golden Door in old Stamboul flanked with columns resting on lead

This use has additional interest because it comes from the city that has been called the "City of Lead Domes" as a result of the extensive use of lead roofing on its buildings.

All Lead Joints in Longest 36 in. Cast Iron Water Line

PROBABLY the longest 36 in. cast iron water supply line in the United States was recently completed for the Lincoln, Neb., Water Department to carry water to that city from the Platte River Valley near Ashland. The main pipe line is 25.1 miles long, and a well pipe line 3.7 miles long varying in size from 24 in. to 36 in. was also constructed. All joints were poured with lead and calked over dry braided hemp or jute by means of compressed air hammers.

The contract provided that maximum permitted leakage on completion should be 100 gallons per inch of diameter per mile for 24 hours, as this is a pumping line and joint leakage had to be held to a minimum. The pipe, tested in sections, showed the following results:



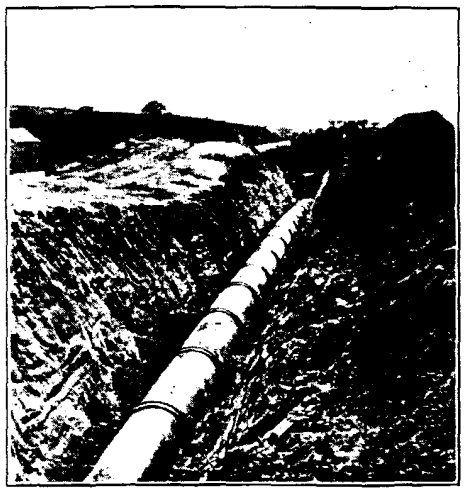
COURTESY U. S. PIPE & FOUNDRY CO.

Calking poured lead joints with pneumatic hammers

Section	*From Station*	*To Station*	*Length Lin. ft.*	*Leakage G.P.M.*	*Leakage, gal. per in. diameter per mile, per 24 hours*
A	0	512	51,200	2.46	10.16
B	512	809	29,700	2.24	15.95
C	809	1125	31,600	0.90	6.02
D	1125	1326	20,100	1.41	14.83
Total			132,600	7.01	11.18

The same leakage requirement must hold two years after completion and 2 per cent is retained by the city from payment to the contractor during this period.

Under these conditions, with more than 11,000 joints to make on a line extending through all kinds of ground from rock to that too soft to support the pipe, the contractors had to rely on a jointing material they knew would stand up. The performance record of lead over a period far exceeding that of any other jointing material indicated that the contractors could use it with perfect assurance. Pouring temperatures do not have to be closely controlled when lead is used and the large amount of cold metal coming in contact with the molten lead in jointing large diameter pipe does not cool the lead too rapidly. Thus good joints are better assured with lead.



COURTESY U. S. PIPE & FOUNDRY CO.

A section of the 36 in. cast iron pipe line that has 11,000 poured lead joints

Likewise, once installed the flexibility of lead joints will permit movements of the pipe in the ground without injury to the joints or undue strain being placed on the pipe and possible breakage. The contractors can be well assured that when leakage tests are made after two years results will meet the contract requirements, for there are many cast iron water mains with lead joints that are serving satisfactorily after more than a century in the ground.

Lead Anti-Vibration for Rolling Mills

A RECENT issue of *Steel* states, "Dampening the vibration of lubrication pipe lines serving roll stands, pinion stands, pumps and other rolling mill machinery is effected by pieces of sheet lead installed between the clamps and the pipe." LEAD has repeatedly emphasized the importance of eliminating vibration in building foundations, machine foundations and pipe line hangers and has told how lead is used in combating this undesirable condition. Data on any of these phases of the subject will be supplied upon request.

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

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