

LEAD

*Published by
Lead Industries
Association*

VOLUME FOURTEEN

MAY-JUNE, 1944

NUMBER THREE

IN THIS
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WARLOAN**

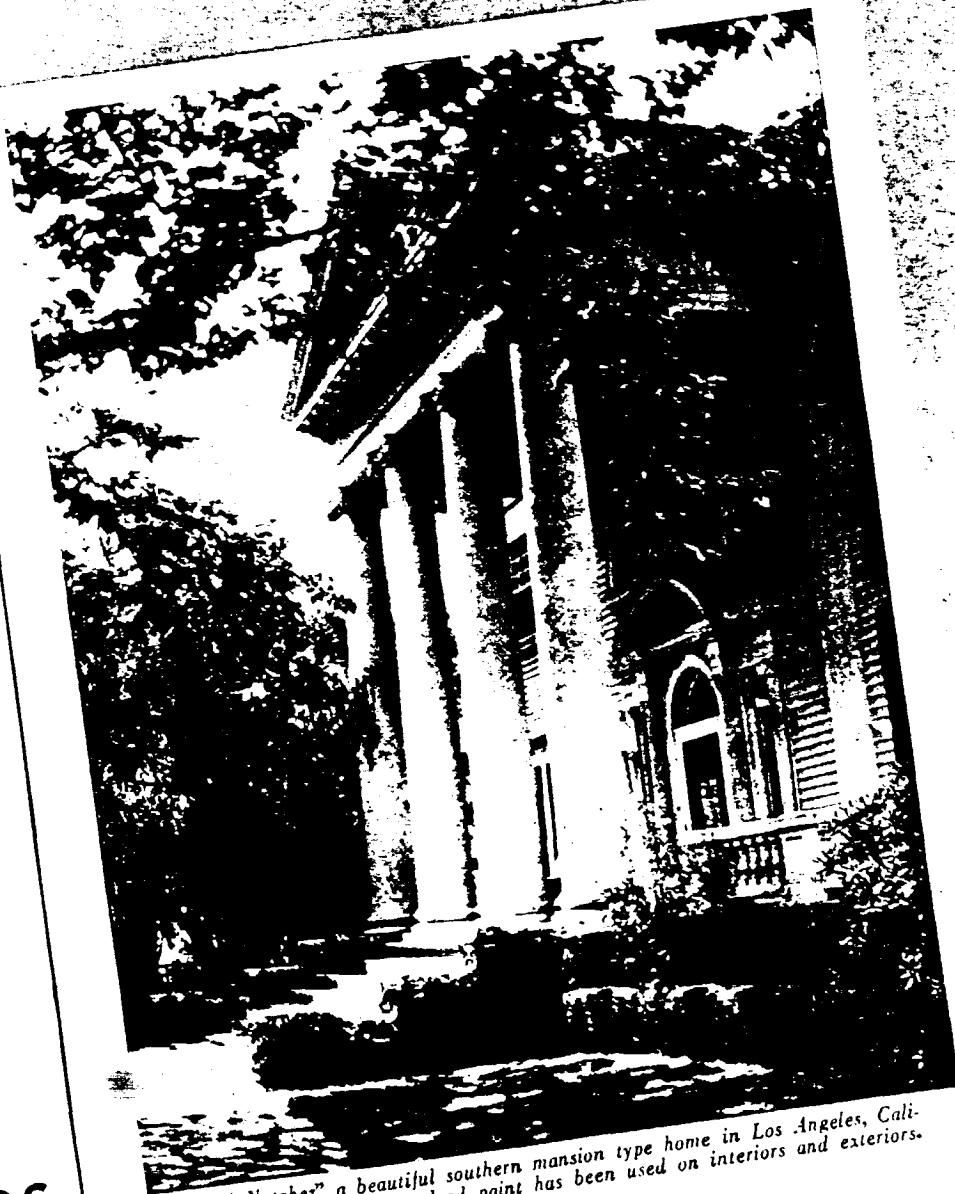
Make the
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"Old Natchez" a beautiful southern mansion type home in Los Angeles, California. Only pure white lead paint has been used on interiors and exteriors.

Lead Industries Association New York 17, N. Y.

"Old Natchez" A California Home Reminiscent of the Old South

"OLD NATCHEZ," the home pictured on the cover might be, as far as its appearance is concerned, in the environs of the Mississippi city from which it takes its name. However it is not there but is in the equally beautiful state of California. Old Natchez was so named by its owners, Mr. and Mrs. Hugh Hinton Evans, because it reminds them of the southland which they love and where they own other property.

The house was built 33 years ago in Windsor Square in Los Angeles and though it is now surrounded by the other houses of a well built up residential district, it was at the time of its building a pioneer venture where jackrabbits could be shot from the back porch and where the five fireplaces had to be used for heat and candles for light because there were no gas and electric services installed along the dirt roads.

"Old Natchez" has had its part in California's major industry too. It was used as the setting for more than one motion picture in the days when shooting was done "on location," even some of the truly antique furniture having been used in the scenes. The landscaping includes curving drives



The spacious stair hall in "Old Natchez." The cool sheen of the white lead painted walls and ceilings forms an ideal background for the fine old furniture.

In the living room is an Adam mantle from the family home of General "Jeb" Stuart in Virginia.

and stately trees hung with swaying Spanish moss exactly as it would be if it stood on the banks of the Mississippi.

The house is built of California redwood rather than the pine or cypress which was used in its southern predecessors and there have been minor concessions to locale and period, but the painting both outside and inside has always been done with pure white lead paint which has been the established standard of paint quality on the fine old houses of America since Colonial days. It is the owners' pride to keep the house in the best of condition by means of the use of the best of materials. The beauty of both the interior and exterior of this lovely house has always been protected by pure white lead paint.

The use of white lead paint throughout the interior is characteristic of the Southern Colonial precedent for this house. It was common practice in the finest of early American homes. Investigations of old documents and existing buildings by the architects of the Williamsburg restoration established the fact that pure white lead paint has from very early times been as it is now, the standby of the best interior decorators.



PHOTOS OF DICK WHITTINGTON

Cost Of Pipe A Small Part Of Expense Of Water Service Installation

THE choice of material for the service pipes of a municipal water distribution system is usually the responsibility of the engineer in charge. His decision will, of course, be based on the physical characteristics of both the material and the environment, and his training and experience will influence him to select the most durable, most trouble free material. Because lead fills the exacting requirements of service pipe use so completely and because lead can show so many records of long time performance, it is bound to be favorably considered when the time comes to make a decision.

However engineers are responsible for the costs of operation of their water departments as well as for the maintenance of their plants. Therefore in the purchase of supplies costs must also be taken into consideration. At the time of purchase of even a very modest stock of service pipe a difference in price of a few cents per foot can seem to provide the means for a substantial saving.

But the price of pipe per foot has very little influence on the cost of installing a water service; too little, in fact, to justify the gamble of installing any material other than the most durable and dependable. The installation of a service involves many charges as great or greater than the cost of the pipe. The tap, curb box and stop must be provided, labor for digging, laying the pipe, and backfilling must be furnished, and a whole series of incidental expenses such as pavement repair, transportation and general overhead must be included. In the midst of all of these charges the cost of the pipe itself is a very small item.

As a concrete example the accompanying table of itemized costs of four water services selected at random from the files of the water division of a large eastern city show the relationship between the cost of a lead water service pipe and of the service installed.

It will be noted that in no case does

the cost of the pipe amount to more than 12.6 per cent of the cost of the installation. If the use of a less durable material than lead had made possible a saving of as much as 25 per cent in the cost of the pipe, it would have resulted in a saving of only 3.2 per cent of the cost of the total installation of service No. 2 and even

less in the cost of the shorter lines.

When consideration is given to smallness of actual savings that can be made by sacrificing durability to price it seems poor economy to install anything but the most durable material. It is certain that such savings could never compensate for the expense created by the failure of even one installation, which would result in early repetition of all other costs amounting to about ten times the first cost of pipe or forty times the probable initial saving.

Cost of Installing Lead Water Service

Length	(1) 12' 0"	(2) 31' 0"	(3) 22' 0"	(4) 10' 6"
Tap & Coupling.....	\$1.05	\$1.05	\$1.05	\$1.05
Curb Stop	2.51	2.51	2.51	2.51
Wiped Joints	1.35	1.35	2.03	1.35
Curb Box	1.92	1.92	1.92	1.92
Plumber	7.00	6.80	7.00	6.80
Engineer (Compressor)	3.50	3.50	3.50	3.50
Chauffeur	4.09	3.52	4.09	4.09
Labor	18.72	31.20	24.96	21.84
Overhead	10.33	14.65	12.06	10.65
Gasoline	.30	.30	.30	
Paving Repair	25.00	25.00	25.00	25.00
1-in. Lead Pipe.....	5.10	13.18	9.35	4.51
Total	80.87	104.98	93.77	83.22
Cost of Pipe, Percentage of Total...	6.3%	12.6%	10.0%	5.4%

Lead Inserts In Cast Iron Meter Body Form Seat For Measuring Chamber

SOME of the finest examples of the resourcefulness and ingenuity of American mechanical designers have been produced in efforts to maintain production of serviceable, durable



equipment in the face of shortages and curtailments of supplies of materials.

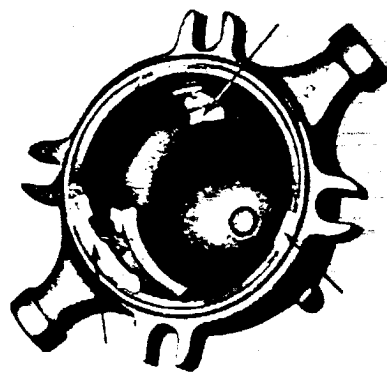
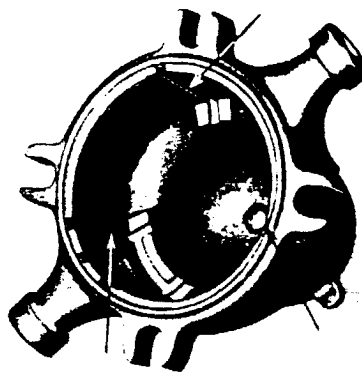
One interesting case is the Empire Victory Meter produced by the Pittsburgh Equitable Meter Company of Pittsburgh, Pa. This company's regular peacetime domestic service meter was made almost entirely of bronze. To cut down consumption of this metal, which is a critical war material, the company decided to change to a cast iron case, treated and coated for protection against rust.

However, at certain points in the meter case there must be machined surfaces to which the measuring chamber must fit with very small clearances.

Pouring lead alloy into bronze moulds wedged in cast iron water meter body.

Such surfaces cannot be covered with protective coatings so they must be non-corroding in order that the measuring chamber may be easily removable in case repair or calibration is necessary. The logical solution is the use of inserts of corrosion resistant metal at these points and a lead alloy has been found to be serviceable and durable in this use.

In the manufacture of the Victory Meter, the iron case is cast with keyways to serve as anchors for the lead. After cleaning the iron castings, three bronze moulds are set over these keyways and wedged tightly in place while the lead alloy is poured. After dip-coating with a protective enamel the meter case is then chucked in a special turret lathe which machines the surfaces of the cast lead inserts as well as the bottom groove for the frost plate gasket. No metal inside the meter case other than the lead alloy is touched by the cutting tools so the enamel covering of the cast iron sur-



Left, cast iron meter body showing anchoring keyways. Right, poured-in-place lead inserts ready for machining.

faces remains unbroken throughout.

The manufacture of the meter is completed by the setting of the measuring chamber in place on the machined lead alloy surfaces, assembling the registering gear trains and dials, and testing.

Thousands of water meters of the domestic type are required for the

many housing projects which have been required at war production centers. The use of the lead alloy inserts is making possible the continued installation of maintainable water meters with materials much more readily available than the high quality bronze which has commonly been used in the past for meter cases.

An Outstanding Example Of Puttyless Glazing

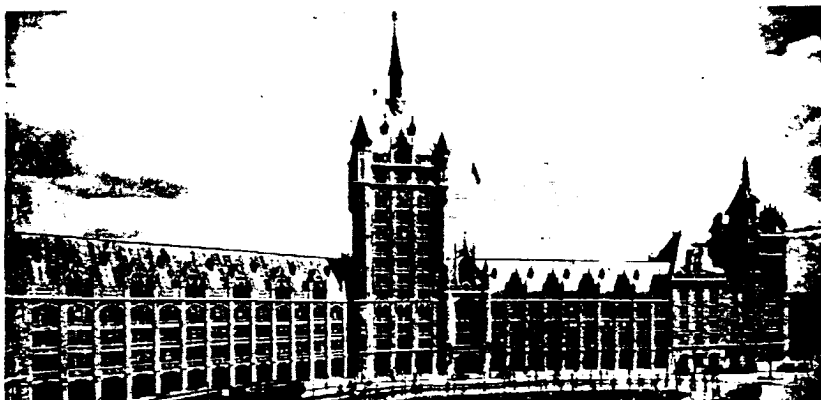
A interesting and important example of the application of lead glazing strip in place of putty in the windows of a large building is furnished by the office building of the Delaware and Hudson Railroad Corporation in Albany, New York. This beautiful structure has a great many windows of various shapes and sizes, mostly double hung but including some rather large casements. All are

wood sash and all glass is secured in the sash by lead glazing strips in place of putty.

Since the building was erected in 1916 these windows have endured repeated wide variations of temperature as well as the beating storms of a none too gentle climate. That they have been successful and practical is clearly indicated by the statement of Mr. James L. Connell, superintendent, who



Lead glazing strips in good shape after 27 years of service on the stiles of a tall casement.



Office of the Delaware and Hudson R. R. Corp., Albany, N. Y. All glass is set in lead glazing strips.

says, "Our building is wholly equipped with what is known as puttyless windows, in which lead strips take the place of putty. They have been in use for the past twenty-seven years. These windows have given very good service. I recommend them from experience in that I have been Superintendent of the D. & H. R. R. Corp. office building for the past seventeen years."



No. 25

THREE HOUSES IN CENTRAL MASSACHUSETTS

THE three houses introduced into the Portfolio of American Landmarks this month are located in south central Massachusetts. Their building dates range over sixty years, from 1771 to 1833, but their architectural style shows that there was little variation in popular taste through the years. Their designer-builders were concerned only with the problems of producing sturdy and beautiful structures capable of withstanding the bitter New England winters with the materials which they had available. They were not troubled with controversies over styles and trends but went calmly on their way following precedent and improving their designs as their knowledge and experience increased.

Although present day thinking tends to veer away from too much dependence upon precedent in matters of design there is no better guide in the selection of materials of construction than experience. Few materials can stand the test of time as can the pure white lead paint upon which the early American builders depended for the protection of their houses, many of which are to this day regularly painted with this dependable material.

The Alexander Field house, Longmeadow, Mass., built in 1794 on land granted to the Cooley family for home building purposes. The regularly maintained white lead paint contrasts pleasantly with the masses of deep green foliage.



The Justin Coulton house, Longmeadow, Mass., built in 1833, now called "The Old House on the Green". Its present owners continue the practice of periodic repainting with pure white lead paint.



The "Publick House" at Sturbridge, Mass., has been a tavern since 1771. Built by Col. Ebenezer Crafts, a leader in the community and an ardent patriot, this Inn has always been kept painted with pure white lead paint.



PHOTOS BY DAYTON SNYDER

THIS IS NO. 25 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.

Famous Springfield, Mass. Municipal Building Redecorated With Pure White Lead Paint

IN December of 1913 the City of Springfield, Mass., dedicated the buildings of the first Municipal Group to be planned and executed in the United States. These buildings were built on the site of the old City Hall which had been destroyed by fire after

begun which will eventually include all of the interiors of the buildings.

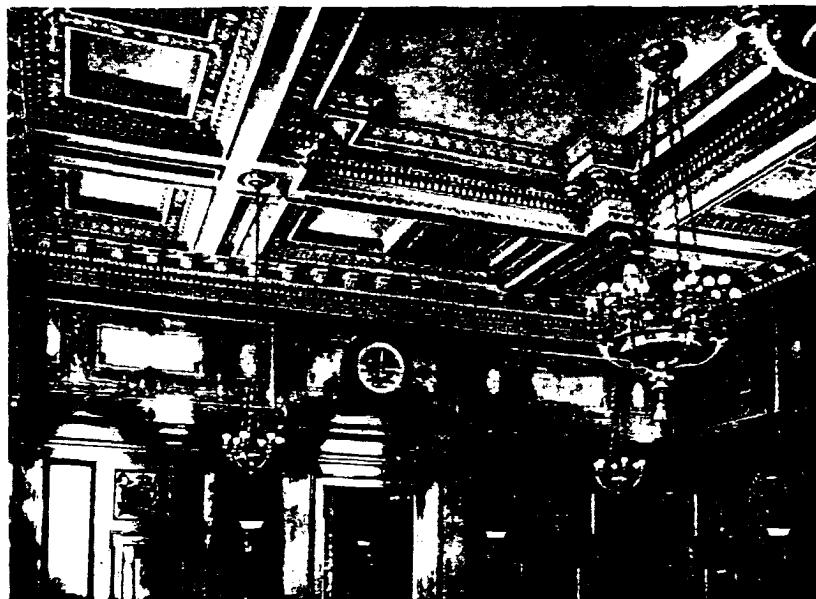
As when the building was first constructed, greatest care is being given to the selection of materials. Pure white lead paint, mixed on the job, is being used throughout. Mr. H. B.

Sornborger, superintendent of the Department of Public Buildings and his painting superintendent, C. Johnson, believe that the best quality is not only the most economical but, that in the case of paint, it is little if any higher in first cost. Mr. Sornborger's responsibility includes many other city owned buildings besides the Municipal Group on which he practices the same procedure of economy through quality.

In charge of color mixing and selection and decorative work is G. Marceaux, painter foreman, who takes great pride in the gorgeous work he has had the opportunity to do on some of the ornate ceilings in the more important rooms. He also has painted the wainscot in a ground floor room in the likeness of genuine marble so accurately that the term "marbleizing" commonly applied to work of this sort falls far short of describing the effect.

In all of the work, plain or ornate, pure white lead paint is the basic material used, not only because it is stable and durable but also because it is workable and adaptable to the painstaking and careful production of artistic effects.

Also, the painter is in every case able to adjust the mixture and body of the paint to the surface to which it is to be applied.



Ceiling of Common Council Chamber, Springfield, Mass., Municipal Building. The colors, remarkably effective under artificial light, are pure white lead paint mixed and tinted on the job.

serving the community for exactly one hundred years. It is interesting to note in these days when nearly every town and city possesses a more or less recently constructed Municipal Auditorium, that the old City Hall in Springfield housed, in addition to the various city offices, a large auditorium room.

The Springfield Municipal group is known to all architects and city planners and the foresight and civic pride which motivated its building have been an inspiration to other cities in their planning activities.

Although the buildings are in perfect structural condition it has recently been decided that the interior decorations have become a little dingy during their thirty years of service and a repainting program has been

Believe it or not the wainscot is "marbleized" on a pure white lead paint background.



WORTH NOTING

THE LATEST ON LEAD—"Lead Carries Its Weight," by Fred P. Peters, *Scientific American*, June, 1944, surveys some of the recent advances in lead and gives a hint of its post-war prospects. Instructive and authoritative reading for those interested in metals.

RED LEAD FOR STRUCTURAL WORK—This is the title of an article by L. L. Carrick appearing in *Engineering News Record*, April 6, 1944, page 70. It is a technical and practical discussion of the use of red lead for painting structural steel that should be valuable to engineers and others.

SOLDERING TIN CANS—"Can Makers' Wartime Problems," by James A. Stewart and R. W. Pilcher, American Can Co., in the March 25, 1944, issue of *Chemical and Engineering News*, discusses, among other things, the soldering problems of the can industry resulting from tin conservation and how these problems have been met. Included are problems resulting from lower tin content of solder and from the use of the lighter electrolytic tin coatings on cans in place of hot-dip coatings.

Lead-Asbestos Vibration Isolation Pads Safeguard Canadian National R. R. Station

THE new Central Station of the Canadian National Railways at Montreal is the latest large railway passenger terminal to be built on the North American Continent. Planned throughout with great care to provide maximum accessibility to both streets and trains it is laid out as a main concourse over the tracks with separate stairways leading down to the respective train platforms. The baggage and express handling areas are on a third level below the tracks thus providing complete service to the traveling public on a minimum ground area.

Since almost the entire building is directly over the main tracks it was necessary for the architect to isolate the main structure against vibration created by the moving trains. This isolation was accomplished by the use of lead-asbestos anti-vibration pads under each of the structural steel building columns which were ingeniously grouped with steel encased concrete columns supporting the track slab.

The lead-asbestos pad is composed of two sheets of asbestos board separated by a thin steel plate and enclosed in a sealed envelope of sheet lead. Its effectiveness as a vibration damper is due to the resistance to

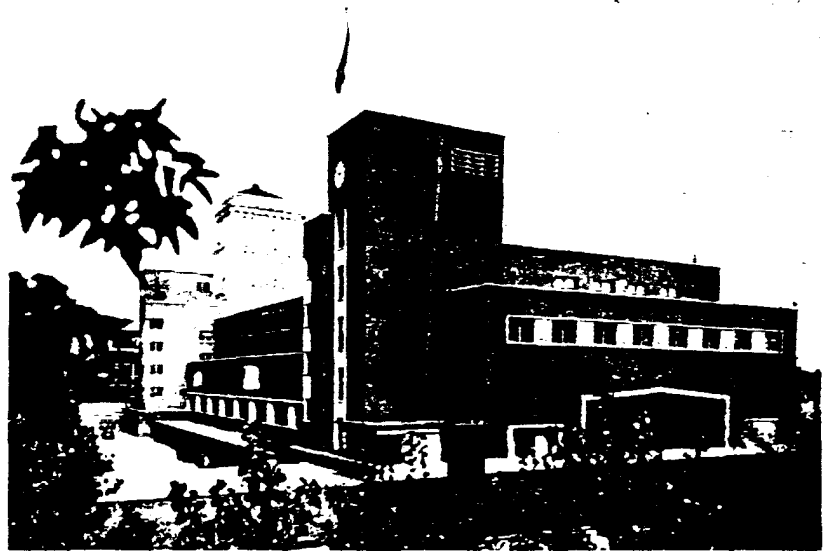
transmission of vibration through dissimilar materials in contact. The lead envelope being sealed, also protects the other materials from moisture and deterioration and assures a long effective life to the assembly.

The accompanying sketch shows how the lead-asbestos pad installed under the structural column grillage made possible the use of one set of

footings to support both the building and the tracks without transmitting dangerous vibration.

This type of vibration isolation has been used for many years by railroads and in buildings adjacent to railroads. It has also been used under heavy machinery such as printing presses and rubber mills. Its relatively high compressive strength and great resistance to moisture and corrosion makes it especially effective where a permanent vibration resistant foundation for heavy loads must be provided.

The newly completed Central Station of the Canadian National Railways at Montreal, Quebec, Canada. John R. Schofield, Chief Architect.



PHOTO, COURTESY CANADIAN NATIONAL RAILWAYS

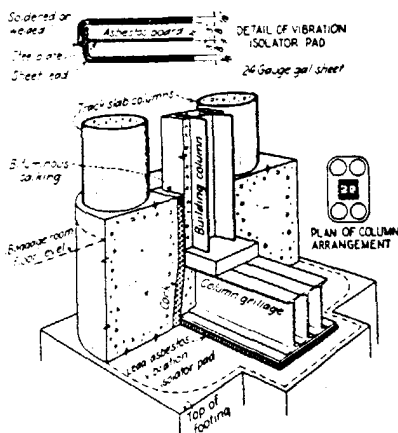
Lead Welding Intended To Conserve Tin Also Proves To Be Economical

THE program sponsored by the plumbing trade for the promotion of the use of lead welding in place of wiped solder joints in plumbing installations is being well received by architects, engineers and city inspection departments. The safety and security of the welded joint is accepted without question and experience is proving that costs are in favor of the welded job.

When the program was first set up time studies indicated that the cost of welding would not exceed that of

wiped joints. That such an assumption was justified is now being proved as more welded jobs are completed. There seem to have been no cases where the plumbing contractor has found that the use of welding has increased his costs or reduced his profit on the job. On the other hand plumbers who have had welding experience are convinced that welding is cheaper than wiping.

One who is so convinced is Mr. Charles A. Lindwall, plumbing contractor of Denver, Colorado. Lead



Detail of installation of lead-asbestos vibration isolation pads in the Montreal station.

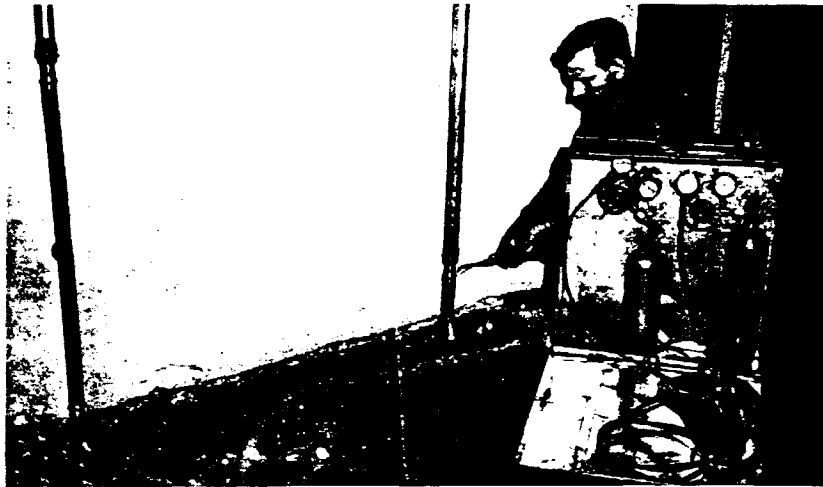
welding has been used on a number of jobs out of Mr. Lindwall's shop, and he estimates that the welded job effects a saving of about 3 per cent over the wiped joint job. The savings seem to be in the elimination of the rela-

tively expensive solder from the material list since with welding no solder is needed except to tin the surface of brass fittings before welding to lead. A small amount of lead welding rod is required but not only is the actual

quantity small but the cost is low.

Thus a program established for the patriotic purpose of conserving tin supplies promises to return financial benefits as well as to fulfill its intended use. There certainly need be no apprehension that a welded job will cost more than a wiped joint job.

C. Vanzant, journeyman plumber of Denver, Colo., showing his ingenious portable lead welding kit in use in the field.



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 17, N. Y.

RED LEAD FOR STRUCTURAL WORK

By Dr. L. L. Carrick, Director, Red Lead Research, Lead Industries Association

A discussion of the rust inhibitive qualities of red lead paint and the best means of making use of those qualities for the protection of structural metal. Reprinted from *Engineering News Record*, April 6, 1943.

PROPERTY PROTECTION WITH WHITE LEAD PAINT

A 28 page booklet on the protective value, durability and beauty of pure white lead paint with quantity estimating tables, formulas and mixing and tinting instructions for exterior and interior use.

SOME PAINTING PROBLEMS AND THE ANSWERS

By Dr. F. L. Browne, Senior Chemist, Forests Products Laboratory, Madison, Wis.

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. Certificate shingle details and installation methods. Reprinted from the *American Builder*, July, 1939.

STOP DEMON RUST

Leaflet giving concise, simple instructions in the use of the rust preventing qualities of Red Lead Paint in protecting farm machinery.

SUMMARY OF NOTES ON LEAD ROOFING

A brief description of the uses of lead for roofing and flashing purposes and the proper practices of its application. Reprinted from *Sheet Metal Worker*.

* Not previously listed.

LEAD EQUIPMENT USED IN INDUSTRY

By F. E. Wormser, Secretary of Lead Industries Association

A summary of the uses of lead in the production and handling of corrosive chemicals. Reprinted from "Metal Progress" to be included in the next edition of *American Society of Metals Handbook*.

WHITE LEAD PAINT FOR DEFENSE HOUSING

Reprint from Bulletin of the Producers' Council including specifications and graphic mixing instructions for exterior and interior White Lead Paint.

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.

LEAD PLUMBING FOR DEFENSE HOUSING

Reprint from Bulletin of the Producers' Council including information on the Emergency Plumbing Standards and the Defense Housing Critical List.

NEW LEAD COATING PROCESS ELIMINATES USE OF ZINC ALLOYS

By W. Yonkman, Engineer, Western Electric Co.

A description of a successful hot dip lead coating process with complete instructions for changing over from hot dip galvanizing using the same equipment. Reprinted from *Product Engineering*, May, 1934.

BRASS NIPPLES AND FERRULES PERMITTED

BRASS calking ferrules and solder nipples are again being manufactured under the latest revision of the WPB Copper Conservation Order M-9-C dated April 4, 1944.

With these brass fittings now available the last threat of necessity to relax the requirements of plumbing codes requiring lead is removed.

Necessary brass fittings for lead water service installations such as corporation cocks and curb stops remain available as they were before this latest revision of Order M-9-C.

PARTIAL LIST OF USES OF LEAD NOT RESTRICTED BY CONSERVATION ORDER M-38

Anodes
Anti-Knock treatment for motor fuels
Bearing metals
Calking lead, lead wool
Ceramics (except as an ingredient of ornamental glass)
Chemical equipment—tanks, linings, piping, pumps, valves, filters, evaporators
Coatings on iron, steel and other metals
Collapsible tubes
Counterweights (except saw-weights)
Die casting for process work
Fittings—traps, bends, floor flanges, ferrules
Flooring in chemical and explosives plants
Gaskets and packings
Insecticides and chemicals
Manufacturing equipment for synthetic fibres
Metal pickling tanks, spray nozzles and piping
Mould material for casting plastics
Name and instruction plates
Paint pigments—white lead, red lead, blue lead, litharge
Pipe—soil, waste, water service and chemical
Plating tank linings
Roofing, flashing, gravel stops, damp proofing
Safety treads
Scientific and experimental apparatus
Sheathing for electric cables
Shot—ammunition
Shower pans, floor safes, waterproofing
Solder
Storage batteries
Substitution for more critical metals
Varnish making—driers
Vulcanizing moulds
Window camers—glaziers lead
X-ray and radium protection

USE PERMITTED WITH CERTAIN RESTRICTIONS

Automobile body solder
Casket hardware—casket linings
Foil

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BY PUBLISHERS PRINTING COMPANY
NEW YORK CITY