

LEAD INDUSTRIES ASSOCIATION

Graybar Building, 420 Lexington Avenue

New York, N. Y.

November 22, 1933.

TO MEMBERS OF THE LEAD INDUSTRIES ASSOCIATION SELLING CALKING LEAD:

If you have not already seen it, you will probably be interested in a report entitled "Deflection Tests of Cast-Iron Water Pipe Bell and Spigot Joints with Special Reference to bell Strength." It is the report of an investigation at the Engineering Experiment Station of Ohio State University in cooperation with a committee of the American Standards Association and the Columbus (Ohio) Water Department by Prof. John C. Prior, and published last year.

Among the conclusions, the one of most interest to sellers of calking lead follows:

"Judging from the action of the harder jointing materials - sulphur compounds and Portland cement - during the tests, it may be concluded that these joints would have had excessive leakage well in advance of the time of maximum bell strain. That is, conditions which cause maximum bell strain from deflection cannot exist without first destroying the joint as a water container. This conclusion applies to 20-inch joints and larger."

In other words, it was found that lead substitutes would have leaked with a certain deflection at the joint, whereas lead joints remained tight with approximately the same deflection. This is important as practically all water mains are subjected to a certain amount of deflection due to ground subsidence, and these tests indicate that joints made with lead are much more apt to remain tight than those made with substitutes. The substitutes all opened up cracks and spalled badly. The substitutes tested were cement, Leadite and Hydrotite. Although not tested, Minerallead would probably have acted the same as the other substitutes as it has much the same composition as Leadite and Hydrotite.

Another item of interest to sellers of calking lead appears on Page 530 of the October, 1933, issue of Chemical and Metallurgical Engineering. It is entitled "Bacteria Destroy Pipe Line in California." It shows that certain bacteria attack the sulphur in joint compounds like Leadite, Hydrotite and Minerallead, causing them to become porous and fail.



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The report mentioned in the first part of this letter may be obtained from the Engineering Experiment Station, Ohio State University, Columbus, Ohio, for \$1.00. The issue of Chemical and Metallurgical Engineering, referred to, may be obtained from the McGraw-Hill Publishing Company, 330 West 42nd Street, New York City, for 35¢ a copy and may probably be referred to in any library.

Very truly yours,

F. E. Worman

Secretary