Lia-1419

LEAD INDUSTRIES ASSOCIATION

60 EAST 42ND STREET
NEW YORK 17, N. Y.

March 9, 1960

SUBJECT: REPRINT--
NIAGARA POWER PROJECT

To Members of the Lead Industries Association:

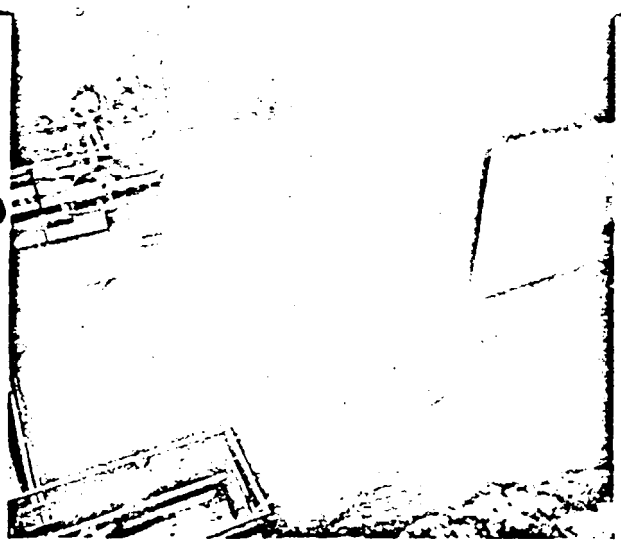
We believe you will be interested in the attached reprint of an article describing the use of sheet lead to form lubricating seals in the concrete water conduits of the Niagara Power Project. This article is the result of cooperation between the LIA staff and the editors of MATERIALS IN DESIGN ENGINEERING.

We will be glad to supply members with up to 25 extra copies at no charge, and larger quantities at our cost of $6.00 a hundred as long as our limited supply lasts.

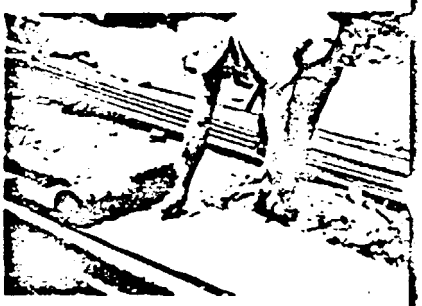
Very truly yours,

Secretary

Att.



Broad view of the power tunnel *under construction shows a poured concrete vertical wall at the right and part of the mobile scaffold at the left. The black band running between is the asphalt-covered strip of sheet lead.*



Strips of lead sheeting *are cut into 10-ft lengths and placed, with ends butted, over the surfaces that have been painted with an asphalt emulsion. The lead sheeting is 2 ft wide, 1/16 in. thick and weighs 3 lb per sq ft.*

Lead Sheet Forms Lubricating Seal

at concrete joints of water conduits

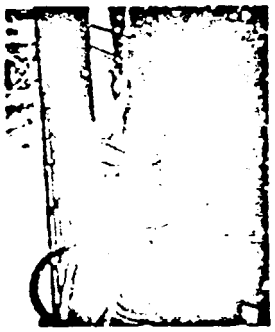
■ Lead sheet plays an interesting role in the fabrication of the 66-ft high, 44-ft wide conduits that will carry water diverted from the Niagara River to the Niagara Power Project. Massive sections of the wall are being poured at each step of a mobile scaffold which carries concrete forms on either side.

Sheet lead is placed in the right-angle butt joint formed between the vertical concrete wall sections and the flat concrete base. In addition to acting as a water seal for the joint, the lead serves as lubricant during wall movements due to stress induced by contraction or expansion of the formed concrete.

Lead was one of several materials that were suitable from the standpoint of high malleability and lack of resilience. Further study, however, singled out lead as the final selection because of its lubricity and ability to carry the design loads. Additional advantages were gained because lead is easily cut and worked, and is low in cost.

These pictures of the Niagara Power Tunnel were supplied by Lead Industries Assn., 60 E. 42nd St., New York 17, N. Y.

Protective coating of asphalt emulsion *is applied to the lead strips to prevent reaction with the free lime in the curing cement. The total lead used on both sides would form a continuous strip over 14.5 miles long and weighing 132 tons.*



Gridwork of steel reinforcing bars *is anchored in the rock wall and the mobile scaffolding rig is moved up preparatory to pouring another concrete wall section on top of the asphalt-covered lead lubricating seal.*

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