

LEAD INDUSTRIES ASSOCIATION

282 MADISON AVENUE

NEW YORK 17, N. Y.

September 13, 1960

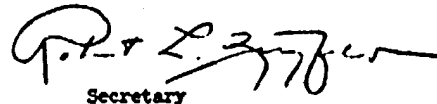
SUBJECT: PROVING GROUND FOR
LEADED SOUNDPROOFERS

To Members of the Lead Industries Association:

We are attaching a copy of a reprint entitled "Proving Ground for Leaded Soundproofers" from "Chemical Week" of August 27, 1960.

Coming from another leading trade publication, we believe this article is further evidence of the amount of interest shown by industry in soundproofing and the possibilities of lead to solve noise problems. It is particularly noteworthy that so many concerns are getting into the act and conducting research and development on their own, at no cost to LIA, largely as a result of publicity and advertising emanating from the Association.

Very truly yours,

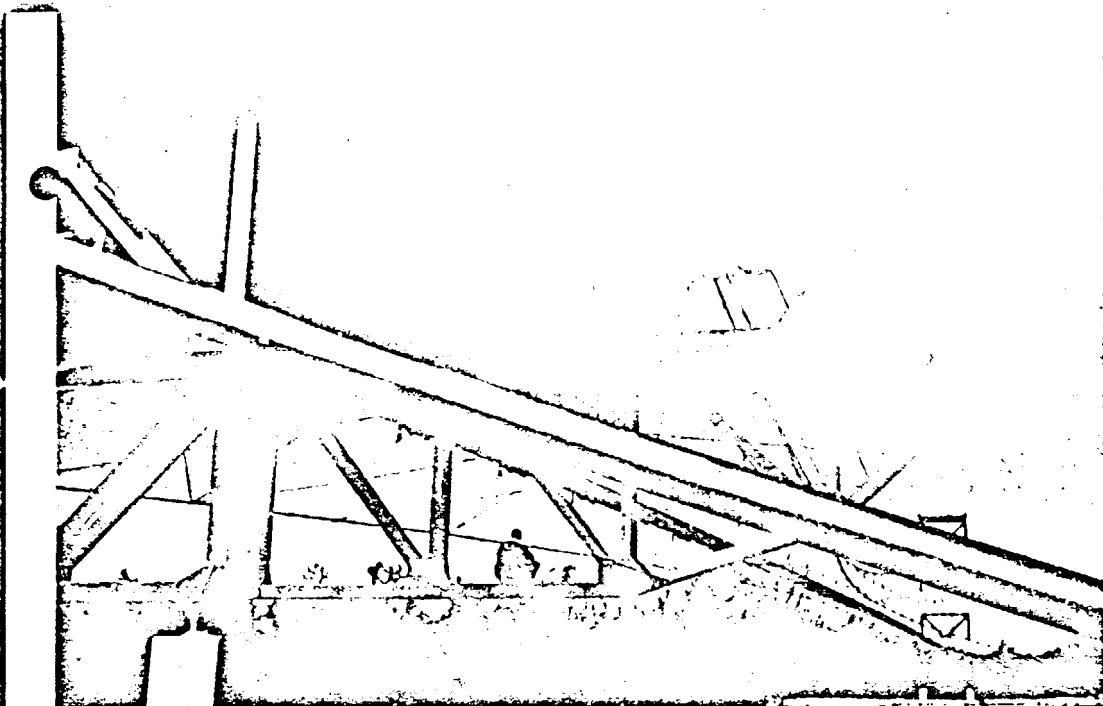


Secretary

RLZ:JRH

Att.

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Pipeline pressure reduction is noisy, but leaded plastic material may help hush the din.

Proving Ground for Leaded Soundproofers

The aggrieved ears of Trenton, N.J., citizens — harried by a noisy pipeline—may get relief in the next few weeks from lead-containing plastics, an old-time material that's now finding new uses in acoustics control.

The Trenton case presents a formidable problem. In reducing the pipeline pressure of natural gas flowing in from Texas from 600 psi. to 200 psi., the Public Service Gas & Electric Co. (Newark, N.J.) ruefully finds that in the neighborhood of the Trenton converting station the line gives off a cacophony of whistles, screeches and roars. To solve the problem the firm is trying to find a method of noise abatement.

Inside track is held by Cordo Chemical Co. (Norwalk, Conn.), whose Coustifab, a lead-loaded vinyl, is top contender for the job. The leaded plastic would be wrapped around the pipes, cutting noise and vibration.

Coustifab is just one example of the increasing number of lead-containing plastic and synthetic rubber

products being used for damping sound.

The Lead Industries Assn. estimates that 600,000-800,000 lbs./year of lead is currently being consumed for these materials, expects a 10-fold jump by '65. Newly found applications are making deeper inroads every day into the acoustical market. And although the number of producers in the field are few so far, several big chemical firms are known to be researching similar products for possible entry into the market.

Mapping the Market: Leaded plastics are not new; they've been finding a market for 20 years as radiation (e.g., X-ray) shielding. But within the last year and a half, new end-uses have opened up in construction, aircraft, submarines and surface ships, machinery mounts, air-conditioning units, transformers, office machines.

Reason for success: the high sound absorption powers of lead, plus the flexibility of vinyl, make it much more effective and somewhat differ-

ent than many conventional acoustical materials (tiles, felt, glass fiber) now on the market. Such materials, acting as a labyrinth, trap much of the sound, but by no means all of it. Leaded plastics, on the other hand, prevent sound from penetrating.

Big in Acoustics: Cordo's Coustifab is a lead powder dispersed in vinyl, and applied as a coat to woven glass or cotton duck fabric. It can be produced in a continuous roll or cast in slabs, and may be colored, embossed or printed. Formulation consists of about 20% vinyl, and 66-75% lead. It is backed with a special pressure-sensitive adhesive. Cost is 60¢ to \$1.50/sq.ft., depending on the thickness.

About a year and a half ago the company began seeking uses for the material other than as X-ray shielding. One new customer is the Navy, which has found it effective for damping hull plates in ships. When applied to the inside of a hull, Coustifab prevents sonar equipment from vibrating. It's also used to soundproof

rooms containing sonar equipment.

Another market is in aircraft—e.g., ceilings and rear side panels of jets. Sikorsky selected the material last month for its helicopters, after finding it markedly reduces noise in cabins.

In the building trade, a possible use is for hotel and motel walls. Most walls are normally 5 to 6 in. thick, including plaster. Coustifab could reduce required wall thickness to 3 in., saving space. Partitions and folding doors are two more fields in which the material is just beginning to penetrate.

Among the companies now making use of the material: Carrier Corp., for air conditioners; General Electric, for transformers; Du Pont, for noise damping on compressors and motors.

Office machines (electric typewriters, computers, etc.) are said to be less noisy when constructed with Coustifab.

Other Entrées: Bar-Ray Products, Inc. (Brooklyn, N.Y.), is now supplying a leaded vinyl similar to Coustifab as radiation shielding, hopes to get into the acoustical field shortly with Lead-X. The firm is currently doing preliminary testing with its sound-deadener in office machines, aircraft and air conditioners.

The Devcon Corp. (Danvers, Mass.) is marketing a leaded epoxy called Devcon L for sealing and bonding in the marine and maintenance fields. It's 94% lead powder and 6% epoxy resins, and can be cast without heat or pressure. It is reported

to have good adherence to lead, aluminum, concrete, porcelain and a number of other materials. When it hardens it can be sawed or machined with ordinary tools. The putty is also said to be an effective shield against radioactive materials.

One casualty of the business is reported by Johnson & Johnson's Permacel Division (New Brunswick, N.J.), which was testing an acoustical material consisting of 70% fine lead powder with 30% isocyanate applied to a Mylar backing. Disappointing results caused the product to be dropped about two months ago.

Silicones are also now getting the lead treatment. Connecticut Hard Rubber Co. (New Haven, Conn.) for the last few months has been selling leaded silicone rubber, Cohrastic HG, for radiation and acoustical use. It is said to provide uniform shielding against high-energy radiation, has a high specific gravity, good resiliency qualities, and can be molded or extruded, or coated on fabrics. The company, looking toward the military, sees a worthy potential market in missiles and outer-space aircraft.

And a radiation shield of paraffin and lead has been investigated by California Ink Co. (Berkeley, Calif.). Originally developed by the University of California's radiation laboratory, it's made of granulated lead in a paraffin wax base, is lighter and considerably cheaper than solid lead (CW Technology Newsletter, July 13, '57).

Neoprene Gets into Act: Within the past year the Navy has also started

using lead-containing neoprene as a sound-damper on submarines—both nuclear and conventional. Exterior areas of the nuclear-powered *Triton* and *Skipjack* are swathed in a fabricated neoprene sheathing containing loose lead shot, which damps sound, serves as an antiturbulence and antifouling coating.

Main producer of the material is Irving B. Moore Co. (Boston), which also supplies it to commercial shipping manufacturers.

Chemical Coatings & Engineering Co. (Media, Pa.) has been handling leaded neoprene for acoustic uses about two years. It sells Corrocoat neoprene and leaded isocyanate coatings, putties, and foams.

Missile-Age Materials: Right now the market for leaded materials is still undeveloped. Because price of the material is relatively high, biggest customer is the military, although manufacturers of appliances are considering the sound-reducing aspects of the material.

Washing machine makers, for example, have found that vibration and noise is practically non-existent when a machine is lined with a leaded plastic. And even a few cents worth of the material, strategically placed, reduces noticeably noise.

But in view of the rapid growth of the business in the past year, and the potential of lead-containing materials in missiles, nuclear vessels, and aircraft—as well as a roster of civilian uses—leaded plastic and neoprene are decidedly a potential market on the move.

August 27, 1960

Reprinted from CHEMICAL WEEK
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330 West 42nd Street, New York 36, New York