

July 1943

TECHNOLOGY REVIEW

Title Reg. in U. S. Pat. Office





Strong, Pliable, with Excellent Electrical Characteristics

Sandee

FLEXIBLE PLASTIC TUBING

THE demand for this VERSATILE Plastic Tubing has grown tremendously with the scarcity of rubber, tin, aluminum and other critical materials. Electrical War Industries have found many applications where SANDEE Flexible Tubing has proved more efficient than materials previously used! This remarkable product has *excellent electrical characteristics*, and is highly resistant to oils, acids, greases. It possesses ample tensile strength which can be further increased with woven fabric covering. Sandee Flexible Tubing is precision-made of transparent or opaque materials, in different colors, dull or glossy finish. It is custom made in various degrees of thickness and flexibility, in many sizes and lengths. This tubing serves efficiently for wire and cable insulation, antenna and transformer leads, cable end sleeves, grommets, cushions, battery drains, oil lines, air hosing, and wherever a tough, protective covering is required. SANDEE Extruded Thermoplastics are also formed into many different stock and custom sections to exacting specifications. Write today for samples, catalog sheet, and complete information.

ELMER SZANTAY, M.E. '35, GENERAL MANAGER

Sandee Manufacturing Company

3945 NORTH WESTERN AVENUE • CHICAGO, ILLINOIS

EXTRUDED PLASTICS AND SPECIAL TOOLS



Your Workers, Your Company, Your Country All Lose—with “Lost-Time Eyes”

... *protect workers' eyes with AO Goggles*

What does a worker think about while lying in a hospital bed or at home, suffering from an injured eye? He thinks of his own pain . . . the worry of his family . . . his lost time. He builds up a resentment against his company for not providing him with the proper eye protection.

But an eye-injured worker is not the *only* loser. Companies that *allow* “lost-time eyes” to happen also lose heavily in hard-earned dollars, irreplaceable

workers, invaluable production. And as a result, our Country . . . for which we are all fighting . . . loses heavily, too, in vital war equipment.

Give your men and women workers AO Goggles to give our fighting forces *what they must have for Victory*. AO Goggles are strong and sturdy . . . yet they are also light and comfortable. Equipped with Super Armorplate Lenses, they provide maximum protection against impact. Have your Safety Director get in touch with the nearest American Optical office.

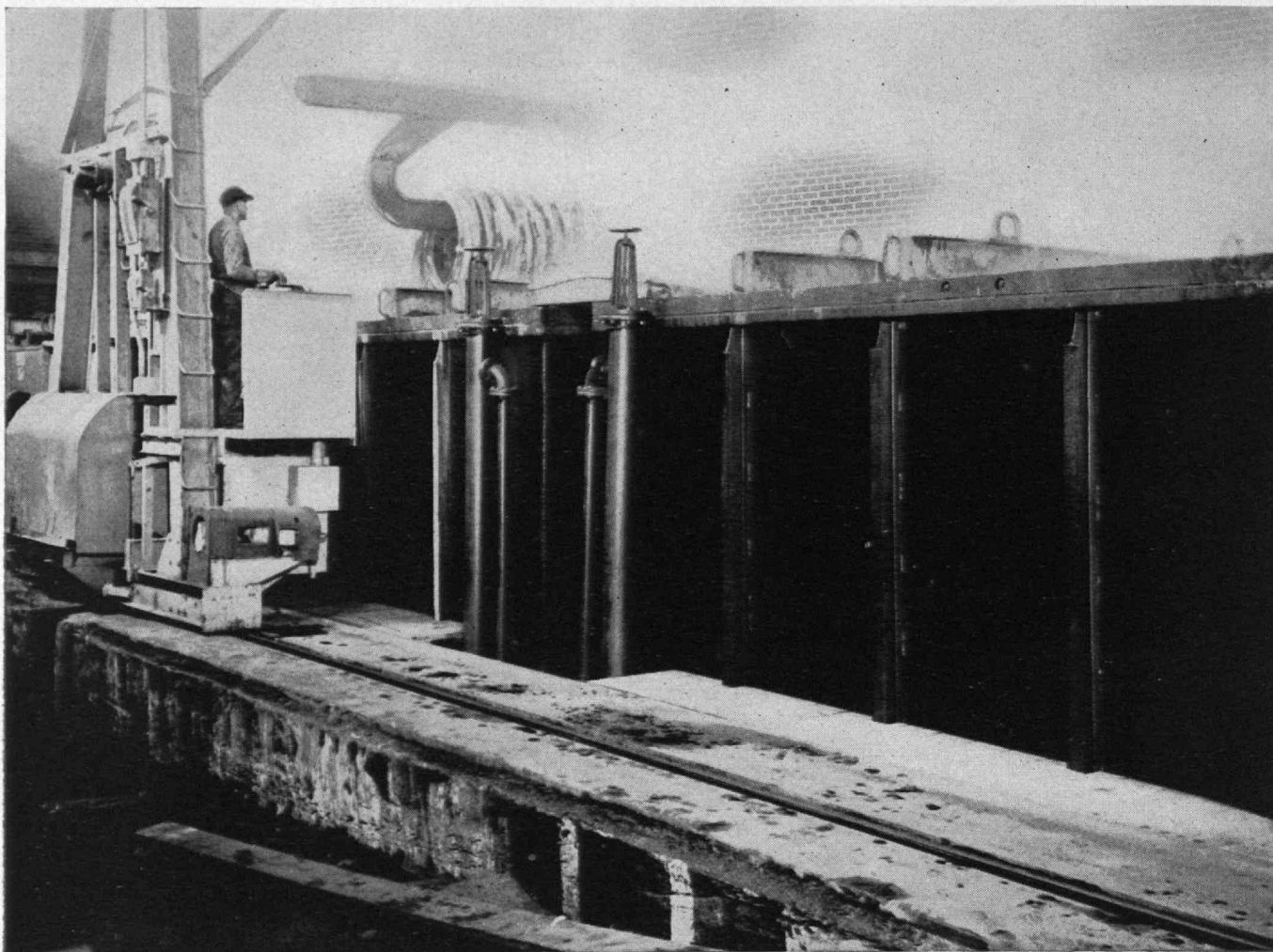
American  Optical

COMPANY

SOUTHBRIDGE, MASSACHUSETTS

MANUFACTURERS FOR 110 YEARS OF PRODUCTS TO AID AND PROTECT VISION. BRANCHES IN ALL PRINCIPAL INDUSTRIAL CENTERS

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EVEN HOT SULPHURIC ACID CAN'T DULL THE GLOSS OF **TYGON** PAINT!

PAINT seldom faces a tougher job than when used on the exterior of hot, non-ventilated pickling tanks. In addition to the viciousness of the fumes arising from hot sulphuric acid, there is the frequent spillage that occurs, plus the moisture which aggravates any corrosive condition.

In this toughest kind of service, where the life of most industrial paints is measured in terms of but a few months (sometimes but a few weeks) Tygon Paint is still taking it, the original gloss not even dulled after more than fifteen months!

The reason? Tygon Paint is, essentially, pure Tygon (the chemically inert, rubber-

like plastic used to line tanks in which corrosives are made and handled) liquefied by the addition of appropriate solvents. These solvents, on evaporation, leave a sturdy, durable film of chemically unchanged Tygon.

Tygon Paint films are odorless when dry, tasteless, and relatively non-toxic (they may be formulated to be totally non-toxic, if desired). The films are tough, flexible, and non-inflammable. Tygon Paints show no tendency to crack, craze, check or "weather" even after long exposure to air, sunlight, moisture or other oxidizing elements. They are highly resistant to acids, alkalis, alcohols, greases, oils and fats. Certain formula-

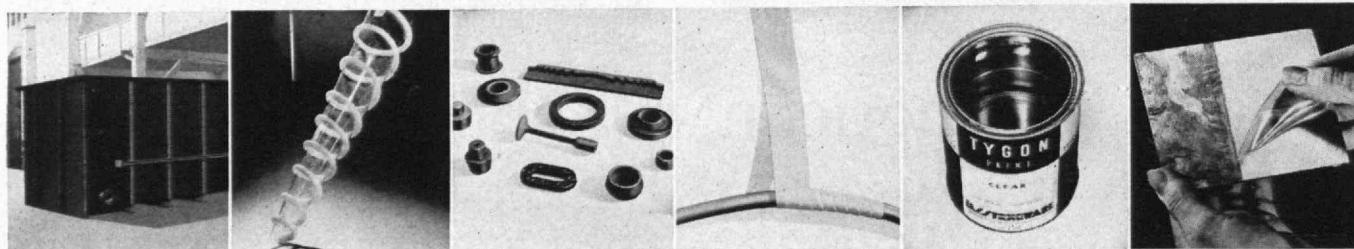
tions will even withstand hot aromatic fuels.

For detailed information on the use of Tygon Paints, and other Tygon corrosion-resistant materials: linings, rigid or flexible tubing, gasketing materials, impregnating solutions, or molded Tygon products, write: U. S. Stoneware Company, Akron, Ohio. In Canada: Chamberlain Engineering, Ltd., Montreal, Que.



U. S. STONWARE

AKRON, OHIO



*Give him the RIGHT GRINDING WHEEL
then let the Grindlins heckle*



Yes, he's got to have a good weapon in the shop, too.

This combination for example—grinding steel castings, with high speed equipment, a rough and tough sort of a job, calls for a grinding wheel built for heavy duty and high speed.

You'd order for this job a Norton Resinoid bonded wheel, Alundum abrasive; and if without experience with this kind of work, you'd consult a Norton engineer, or a Norton distributor for more specific recommendations.

There is a Norton grinding wheel for every type of grinding. Your shop army must have the right equipment

NORTON COMPANY

Worcester, Massachusetts

Behr-Manning, Troy, N. Y. is a Norton Division

NORTON ABRASIVES



POWER LINES DOWN!

IRC RESISTORS Send the Signal

When trouble develops on a high voltage power line, time is of greatest essence. For in our fast-moving electro-mechanical age, minutes quickly translate themselves into countless man-hours. Communications go "dead" . . . lights snuff out . . . vital production grinds to a sudden halt . . . and it's "taps" for a busy world.

Another IRC Contribution

Until comparatively few years ago, when power transmission interruptions occurred, it often required hours to locate the trouble. Today, thanks in part to the contribution of IRC research engineers, the point of disruption in any electrical circuit—whether power or communications—can readily be spotted in a matter of moments.

Specially designed, IRC high voltage power resistors dependably dissipate the heavy loads and deliver the voltage required to operate trouble-signalling mechanisms. On receipt of signal, other instruments in which resistors play an important role accurately locate the point of disturbance within a few feet.

Here at IRC we welcome—and usually solve—unusual problems in the field of resistance devices.

And because IRC makes more types of resistance units, in more shapes, for more applications than any other manufacturer in the world, many leading engineers make it a point to seek our unbiased counsel. There is no obligation, of course.



INTERNATIONAL RESISTANCE COMPANY

423 N. BROAD STREET • PHILADELPHIA

PENFLEX WELD

Corrugated Flexible All-Metal Tubing
for Safety and Service on High Pres-
sure Lines that **MUST** be Leak-proof

Flexibility combined with safety against all normal hazards; resistance to radial and longitudinal strains under high pressure; jointless, welded, leak-proof construction in lengths as needed—all these make PENFLEX WELD Tubing invaluable in handling volatiles, liquids and gases with penetrative or solvent characteristics.

PENFLEX WELD corrugation serves a two-fold purpose—*gives flexibility and develops high resistance to bursting, crushing, cracking or splitting.*

Also available to maintain the leak-proof service and flexibility of PENFLEX WELD are Solseal and Metseal Couplings. Solseal, for general use, designed for service where temperatures do not exceed 250° F. . . . Metseal, a positive metal-to-metal joint, provides tight joints for higher temperature—no packing used, metal must break or melt before joint will separate.

PENFLEX WELD Corrugated Flexible All-Metal Tubing, Solseal and Metseal Couplings are described in Bulletin 90. Write for it.

Flexible PENFLEX WELD
Tubing—in sizes $\frac{1}{32}$ " to 2" I.D.
... Bronze or Steel Construction.



PENNSYLVANIA FLEXIBLE METALLIC TUBING CO.

7227 Powers Lane, Philadelphia, Pa.

ESTABLISHED 1902

CHECK THESE ADVANTAGES OF BLANCHARD GRINDING

★ **Production**

★ **Adaptability**

Fixture Saving

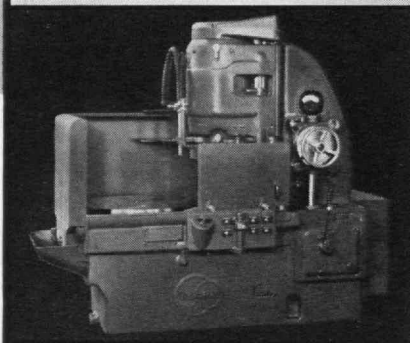
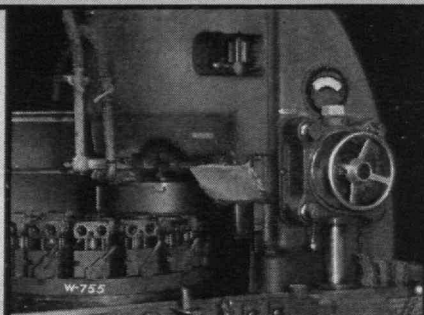
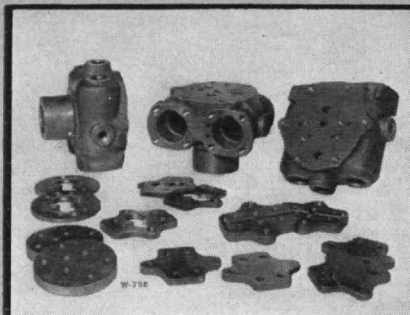
Operation Saving

Material Saving

★ **Fine Finish**

★ **Flatness**

★ **Close Limits**



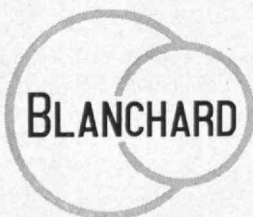
Oil burner pump parts ground on the Blanchard No. 18 Surface Grinder.

THE BLANCHARD NO. 18 SURFACE GRINDER is used to rough and finish grind the oil burner pump parts shown above. They are first ground from the rough, then they are normalized and ground again. All boring and drilling operations are located from the flat Blanchard ground surfaces. After machining, all parts are finish ground on the Blanchard. Twelve pump bodies are ground at once on fixtures mounted on one base plate. The base plate is held magnetically, therefore the chuck may be cleared quickly for a change of jobs. The cast iron pump bodies are 6 inches in diameter. .012" of stock is ground off one side to limits of $+.0003''$ $-.0001''$ at a rate of 48 pieces per hour.



..... Especially
valuable on jobs like
the one illustrated.

The **BLANCHARD**
MACHINE COMPANY
64 STATE STREET, CAMBRIDGE, MASS.



Send for your free copy of "Work Done on the Blanchard." This book shows over 100 actual jobs where the Blanchard Principle is earning profits for Blanchard owners.

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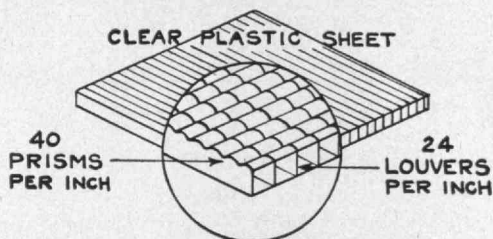
TO *Stop Glare* USE



Reg. Trade Mark

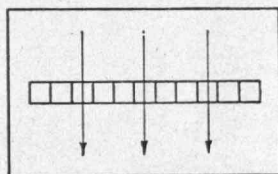
THE LOUVERED PLASTIC SHEET • CONTROL FLUORESCENT LIGHTING TO IMPROVE YOUR SEEING EFFICIENCY

NON-FRAGILE
CELLULOSE ACETATE

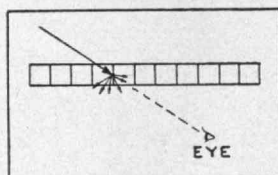


USED BY THE
ARMY AND NAVY

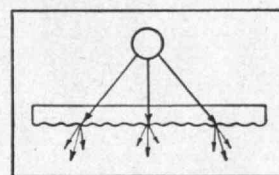
"LOUVERPLAS" GLARE ZONE SHIELDING



Sheet is composed of clear plastic alternately spaced with thin white translucent or black opaque plastic louvers. The clear plastic has high transparency for light transmission. Light is efficiently directed to the work area where it is required, not into the eyes.



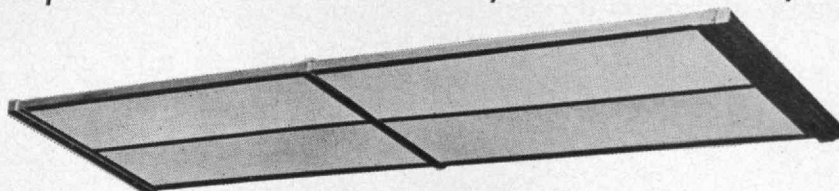
Louvers are the most effective method for the lengthwise control of the fluorescent lamp. As used in the Glare Zone Shield, the thin white translucent louvers diffuse the light within the glare zone that would otherwise enter the eyes as glare. Black opaque louvers will completely obscure the light source from vision. The degree of light control can be varied by the thickness of the sheet.



Prisms are applied to the surface of Louverplas perpendicular to the louvers. The prisms disperse the light source image and control the light in directions parallel with the clear plastic, lowering the surface brightness and eliminating glare. As used in the Glare Zone Shield, the prisms give efficient sidewise control.

Louverplas Glare Zone Covers for Industrial Reflectors

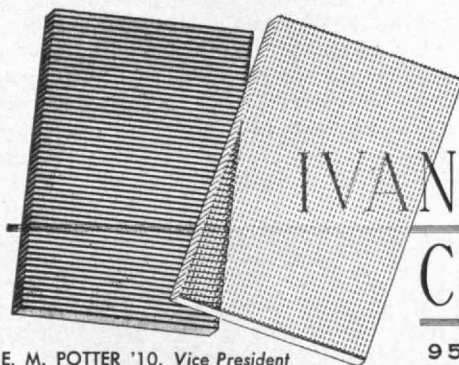
**STOP
EYE
FATIGUE**



**SPEED
UP
PRODUCTION**

Recommended Louverplas Uses

- **WHITE** — "Glare Zone Covers" for fluorescent lighting fixtures, industrial reflectors and marine fixtures.
- **BLACK** — "Vision Expediting" covers for industrial fluorescent reflectors, for close tolerance manufacturing and inspection of war materials.
- **BLACK** — "Louvered Shields" for Cathode-ray Tube devices improving visibility of sine wave.
- **BLACK or WHITE** — Many other industrial or scientific uses for light control.

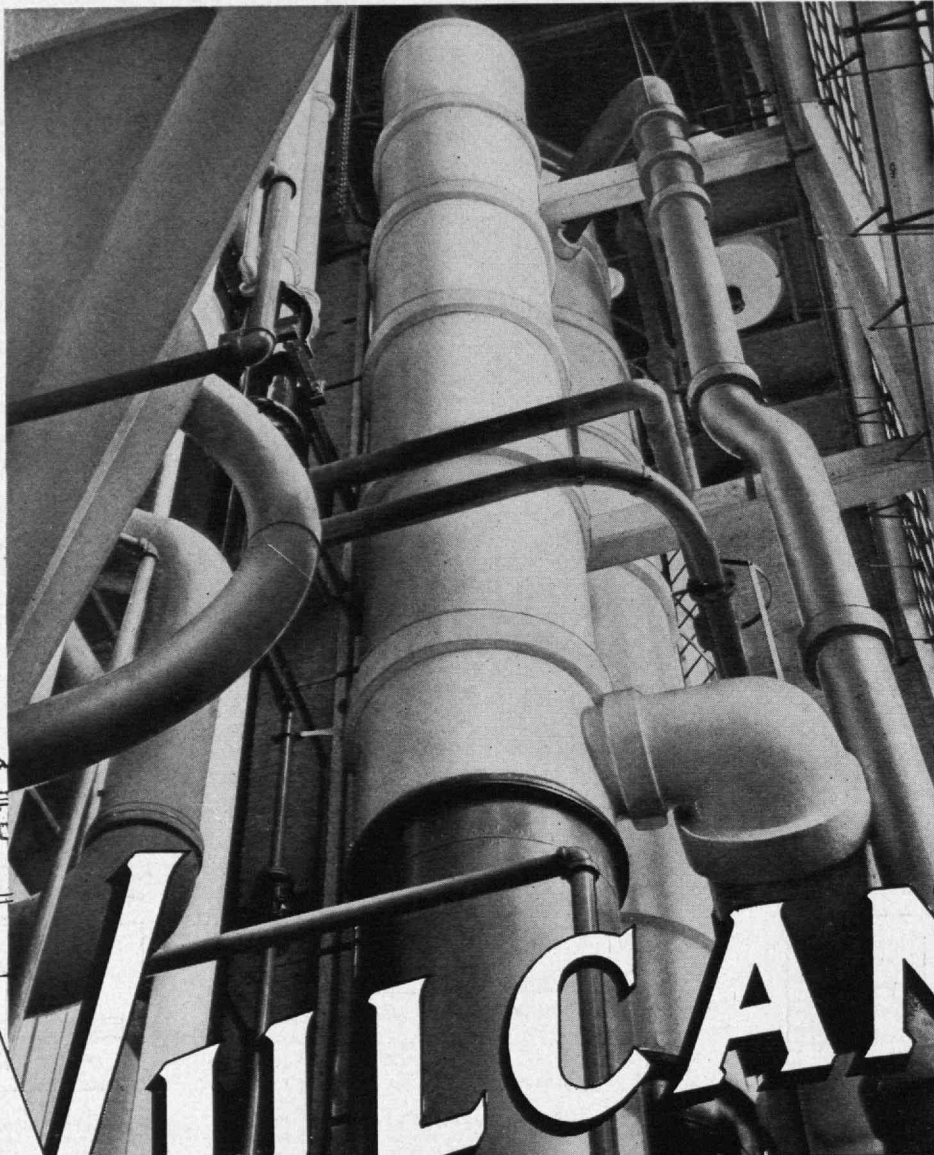


E. M. POTTER '10, Vice President

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95 MADISON AVE., NEW YORK

National Distributors for THE DOANE PRODUCTS CORPORATION, MERIDEN, CONNECTICUT



VULCAN

DISTILLATION

EVAPORATION★EXTRACTION

PROCESSES AND EQUIPMENT

THE demands placed upon chemical engineering organizations by the National Emergency are far reaching and extend into many industries. The Vulcan organization has made many important contributions to the expansion of the process industries during the past 41 years. This fact has made the wartime conversion of these industries a much

easier task than would otherwise have been possible without the progressive developments offered by the Vulcan organization in the fields of Distillation, Evaporation and Extraction. Vulcan is proud of the important part which its contribution to chemical engineering is playing in American industry today.



VULCAN COPPER AND
CINCINNATI, O., U.S.A. SUPPLY CO.