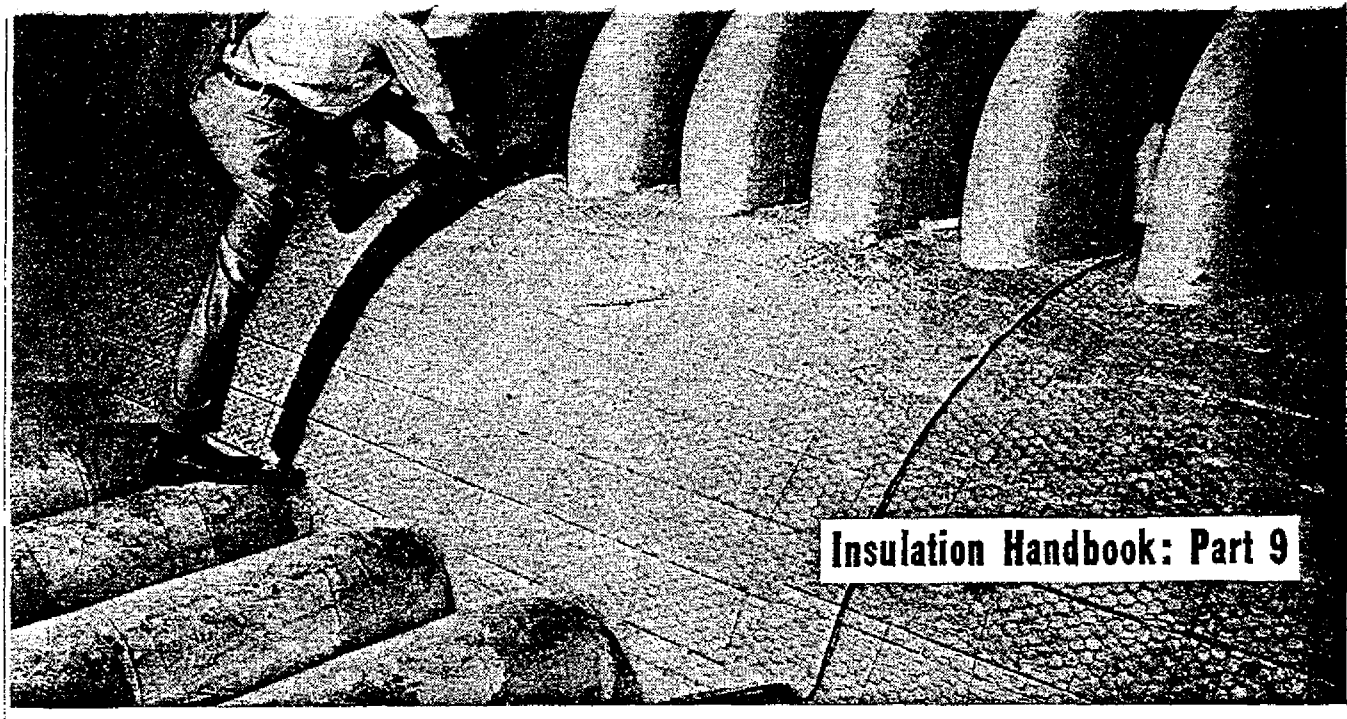


INSPECTOR looks over calcium silicate insulation on large steam drum. Structural strength of this insulation permits moderate loads without crumbling. The workmen and inspectors walk on covered parts, don't worry about damaging them

Insulation Roundup: A Quick Look Into the Future

The first eight parts of this handbook covered many insulations used today. Now we wind up with condensed facts that predict future trends

By PHIL SWAIN, *Editor*

► TODAY YOU NO LONGER ASK yourself, Is there an insulation for my job? Instead, the question is, What's the best insulation for it? That's because there are modern insulations for every temperature range in power and industrial work.

Insulation Choice. Let's say you have a 500-F pipe to insulate. Job specs permit you to use 85% magnesia, amosite asbestos, cellular glass, calcium silicate, or an equal. Since prices and efficiencies don't differ widely for materials usable at this temperature, other factors will influence your choice.

Installation cost, maintenance, dimensional stability, strength and weight are a few you must consider. So you'll find, for an industrial plant where dust is a nuisance in production areas, an insulation that doesn't flake or disintegrate is best. To get this property it may be worthwhile to sacrifice a few points in efficiency or pay a slightly higher price.

In other words, don't buy insulation on the basis of one property. Consider all properties in terms of your job.

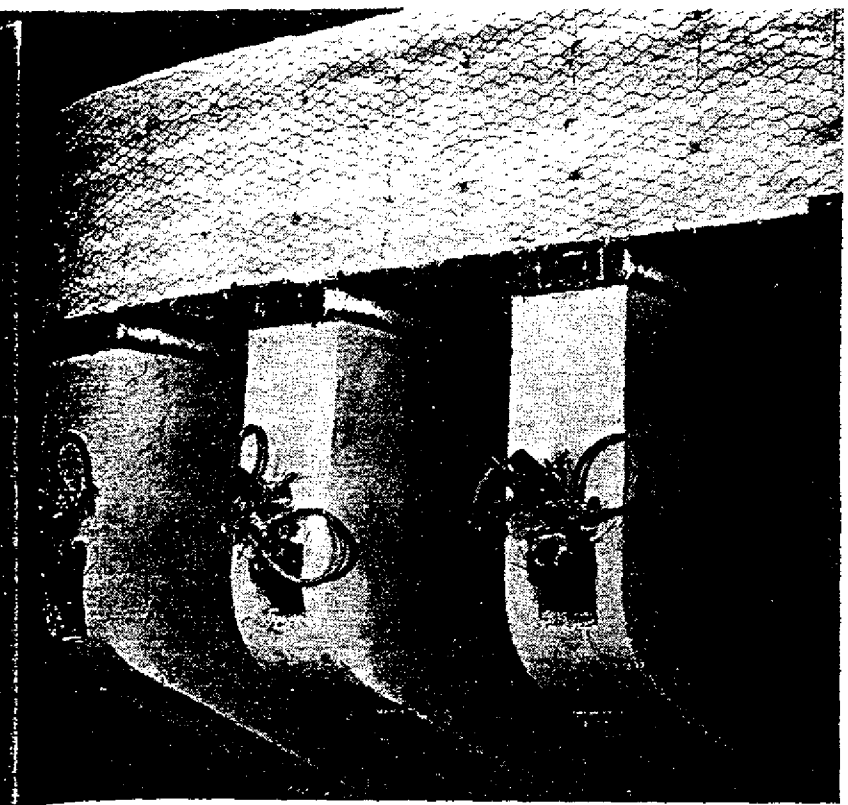
Higher Temperatures. Steam- and industrial-plant temperatures have been on the rise for years. We expect this trend to continue, with the rise in industrial power and process units accounting for much high-temperature piping.

You'll see more high-temperature insulation in industrial plants. It may be calcium silicate, diatomaceous silica, cellular glass or dual layers of other insulation with an inner high-temperature layer and an outer low-temperature layer. Then, thick mineral-wool blankets or other insulation may be used. Up to 700 F, asbestos-sponge-felt insulations will get greater play.

With higher process temperatures you'll need more small-tubing insulation. Tapes and seamless felted and braided insulations protect operators from burns, save heat.

Castables. For boiler and industrial furnaces more castable and plastic insulations will be applied in the field

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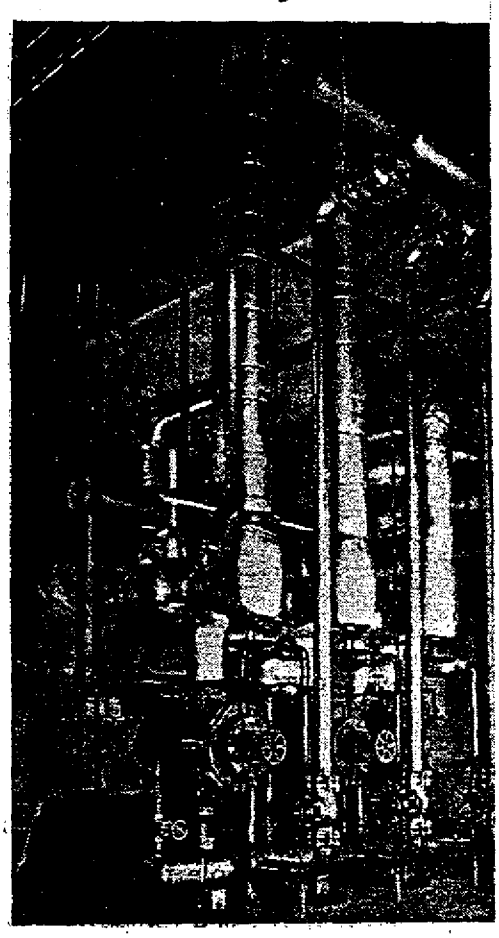


HOT-AIR DROPS to boiler low-load burner boxes are insulated with 1 in. high-temp and 2½ in. regular 85% magnesia finished with asbestos cement. Mesh on duct



CELLULAR-GLASS duct insulation, vapor-seal type, stops sweating of cool ducts

CORK for refrigeration pipes does fine job, makes a neat-looking installation



these, we believe, will gradually supplant preformed and prefabricated insulations on certain jobs.

Talking about castables, here's a kink that isn't new in oil refineries but some power engineers seem to have overlooked it. It is use of castable insulations in large-diameter pipes and vessels. Castable is applied in interior where it does a good job of protecting metal against high temperature and cutting heat loss. Castable insulations are also good for ducts carrying heated air or gas.

Simplified Dimensions. As material and labor costs rise, insulation manufacturers do their best to hold prices down. One way of keeping over-all cost down is to simplify installation so job is easier and fewer men can do it. Simplified dimensions are one answer.

Precision-made, nested insulation fits standard pipe sizes snugly, permits adding more layers at lower cost. Original layer isn't removed to install the second. This idea is bound to catch on with more manufacturers. Some day soon you'll find you're stocking fewer sizes of your favorite insulation because you don't need as many to do the same job when material can be nested.

Old Reliables. What about these? Are 85% magnesia, mineral wool, and other well-known insulations doomed, bound to die a quick death in a high-temperature industrial world? Answer is an emphatic no.

The better-known insulations have proven their worth over the years. In suitable temperature ranges they will continue to save heat. This means fewer of your operating dollars will be used for worthless heating of atmospheric air.

And the old reliables will improve. If not in efficiency, then in application and finishing methods. The heat-insulation field has never been static; research and testing labs are more active today than ever.

Reflective Insulations. Educational program for introduction of this type is about at an end. As recognition of this insulation grows it will find wider use. Research is now under way on multiple-layer aluminum foil for temperatures down to –70 F. If you're a refrigerating engineer, keep an eye on this material; it may save dollars for you in new and old plants.

Cold Jobs. Cork, mineral wool, cellular glass, hair felt and others are a few of the insulations that will continue strong for low-temperature work. Keep up with developments in application; that's where you'll be able to save most.

Lastly, keep up your study of all insulations. POWER will publish all the latest data; read them and you'll learn best ways to keep heat in its place.

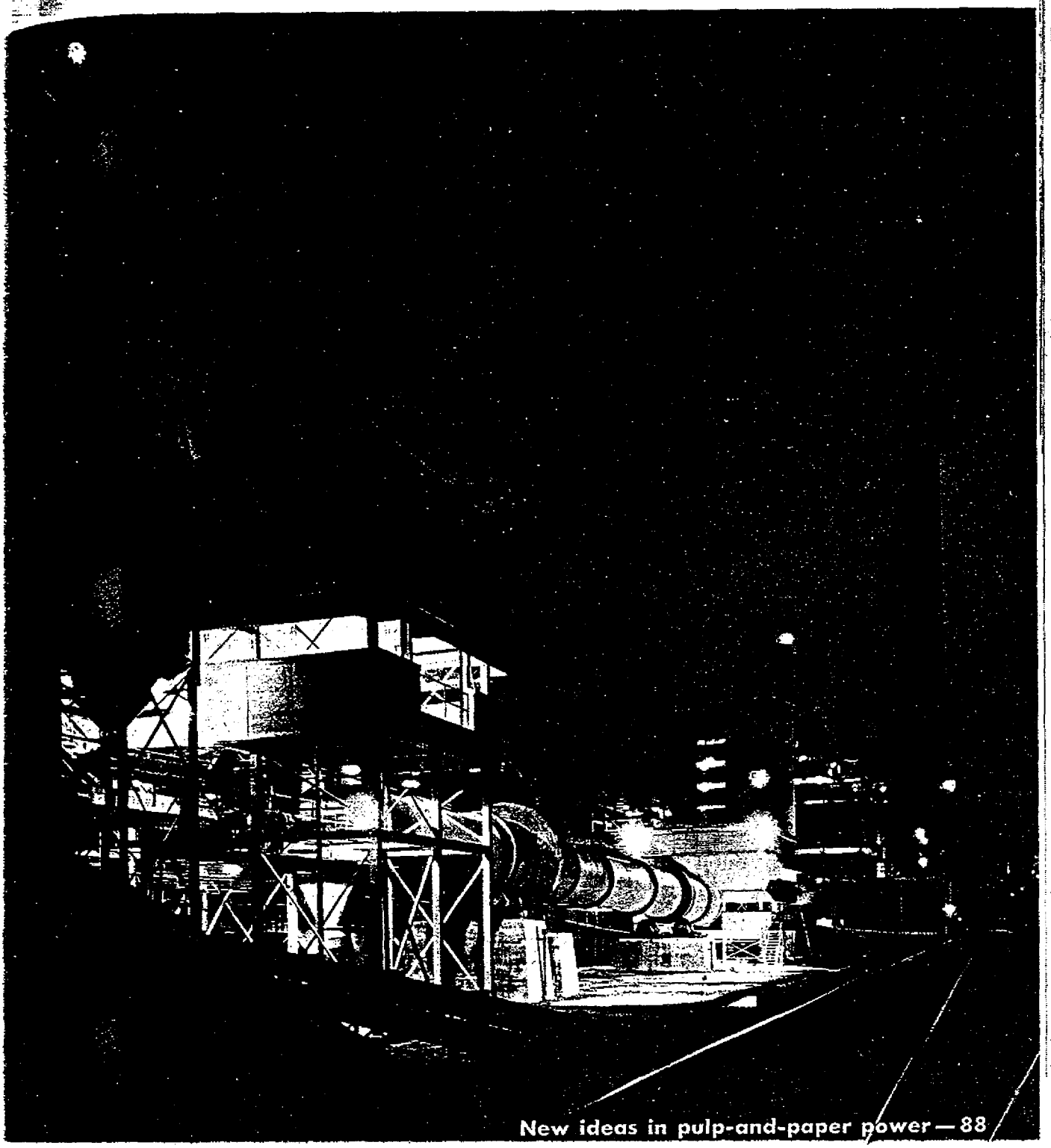
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