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Combines Light Weight and High Strength

New Thermal Insulating Material Combines Light Weight and High Strength

— NEW MATERIALS PREVIEW

● WHEN ENGINEERING REQUIREMENTS dictate high thermal insulating properties along with fireproofness, light weight and structural strength, a new material now being offered by American Structural Products Co., an Owens-Illinois subsidiary, deserves consideration. It is a hydrous calcium silicate material sold in various forms and sizes under the brand name of Kaylo. It is manufactured in two densities—11 lb. per cu. ft. and 20 lb. per cu. ft. The lighter material is used principally for high temperature insulation. The heavier material is used for building purposes, as a tile to form structural roof decks. The 20-lb. material is also used as a core for fireproof doors, fabricated and marketed by U. S. Plywood Corp.

As a rigid heat insulation, the low-density block is suitable for use at service temperatures up to 1200 F. While not intended as a load-carrying member of any structural unit, the insulating block is reasonably strong. Following are some of its properties:

Density: about 11 lb. per cu. ft.

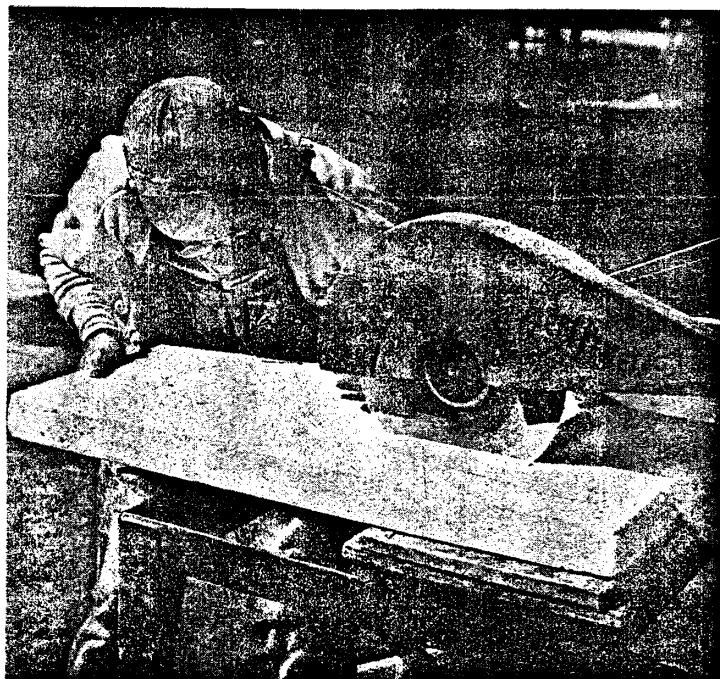
K factor, at 300 F mean: 0.475

Maximum service temp.: 1200 F

Standard sizes: Widths, 6 in. and 12 in.; length, 36 in. only; thicknesses, 1 in., 1½ in., 2 in., 2½ in., and 3 in.

The lighter weight is now available only as blocks in the above range of sizes, as lagging, and in some sectional pipe covering forms. Pipe covering is still in the developmental stage.

The more dense material is intended primarily for building construction. It is finding use as a fireproof roof tile, 2½ by 18 by 36 in. in size, where its effective resistance to passage of heat helps to conserve fuel in winter and to keep the building cooler in summer, and its light weight reduces design loads. For this purpose it is supplied with a reinforcing of steel wire mesh to give increased strength and stiffness. The wire is embedded in the block as a



The insulating material can be easily cut with hand or power tools.

wire basket, providing reinforcing in both directions. Its dimensional stability is another important consideration in building construction.

Some of its properties, and the available sizes, are as follows:

Density: about 20 lb. per cu. ft.

K factor, at 70 F mean: 0.65

Standard sizes: Widths, 12 in. and 18 in.; lengths, 18 in. and 36 in.; thicknesses, 1¼ in., 1¾ in., and 2¾ in.

Use of a block of the 20-lb. density insulation, faced on both sides with plywood, and with the edges covered with matching plywood, will create a flush door that can be finished to correspond with fine interiors, will be massive in appearance yet light in weight, and will effectively resist

fire. A door of this type has already passed the Fire Underwriters Laboratory tests for a "one-hour door," indicating that it will withstand flames for one hour without being consumed and without permitting spread of the flames through the door. Use of such doors in hotels has been suggested.

While the use of the new material in the building field is an obvious choice, the manufacturing industries will also be interested in the possibilities of a lightweight, fire-resistant insulation. The 11-lb. block has been taken up as a heat insulation for high-temperature service by industry, and the heavier material may be expected to fit into industrial production when its properties become more widely known.