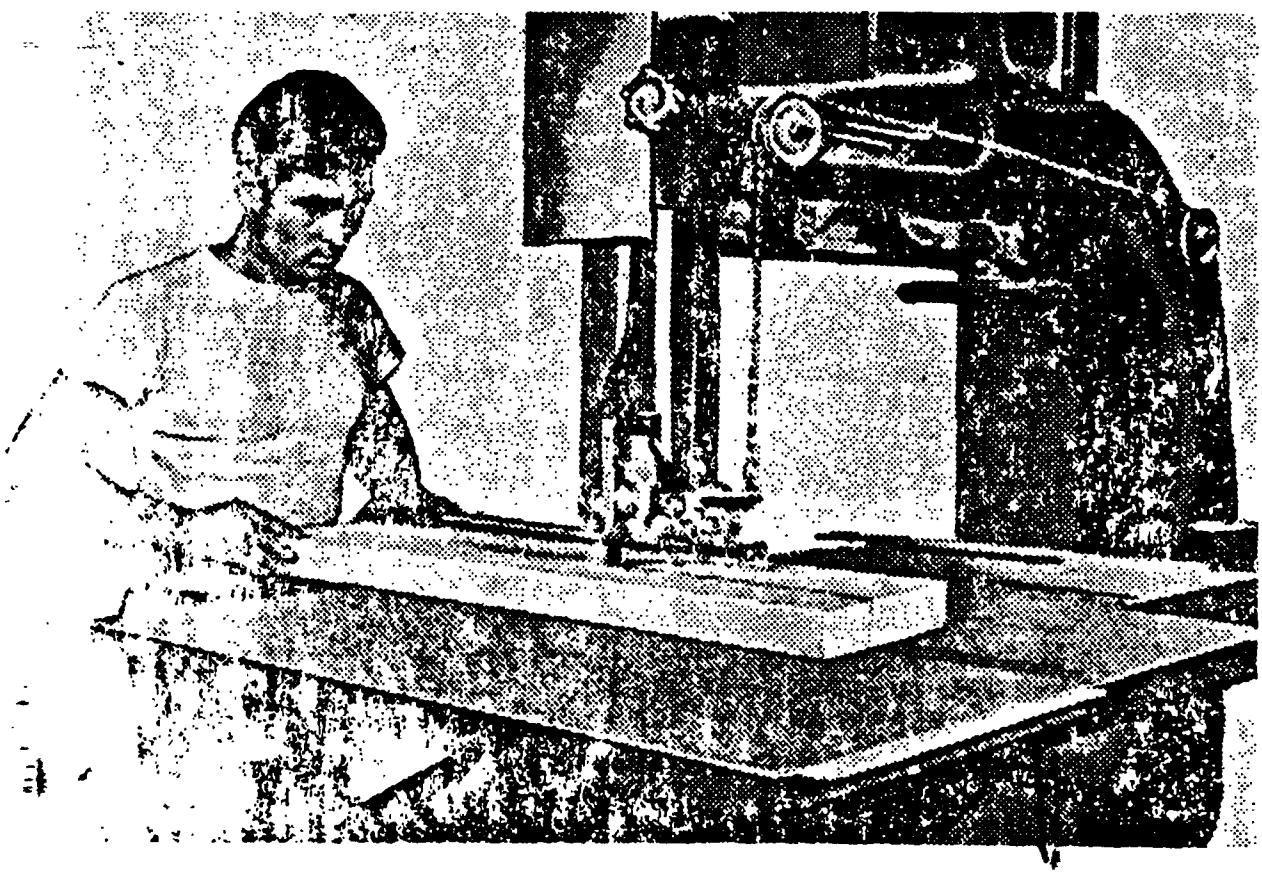
New Product Data

Kaylo Core Material

an easy to fabricate structural insulation

used in panels, partitions and doors



KAYLO CORE MATERIAL

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Kaylo Core Material

an easy to fabricate structural insulation

used in panels, partitions and doors

Fiberglas * Kaylo * Core Material is a rigid mineral insulation composed principally of calcium silicate for use as a fire-resistant core for panels, doors and partitions. There are two types of this material:

Kaylo-1200, white in appearance, has a temperature range up to 1200° F and is available in a 20 lbs. (per cu. ft.) or 12 lbs. nominal density.

Kaylo-1800, colored pink, has a temperature range up to 1800° F and is available in a 20 lbs. (per cu. ft.) or 13 lbs. nominal density.

Kaylo Core Material provides rigidity, fire resistance and low thermal conductivity at weights below that of white pine. It also is an excellent barrier to sound transmission, has bondable surfaces, and can be readily fabricated using conventional woodworking tools and practices. All of these characteristics make it a highly desirable component in fire doors, non-warping service doors, partitions and other building elements in panel form.

Since the introduction of Kaylo, it is possible to obtain an Underwriters' Laboratories label for doors even when faces are plastic, wood or a low melting point metal such as aluminum. Kaylo Core does not burn, is rot-proof and vermin-proof and resists water and termites. When used in a door, it will withstand the most severe service, including repeated slamming.

Choice between the various products would normally be made first on the required temperature limit (particularly where fire-rated doors or panels are involved), then upon considerations of thermal conductivity, weight, and fastening or assembly methods. The lower density material is superior in thermal resistance, the high density product has the better bonding properties and greater structural strength.

Kaylo 1800 has excellent machinability, laminates readily and has higher structural strength. During critical exposure to fire, it will display the greater dimensional stability.

Kaylo 1200 has adequate structural strength and dimensional stability and is more economical.

As a guide to assist you in choosing between the two products and the two densities, the following shows which product has generally been used in various panels and doors.

Kaylo 1200, (12 lbs.) - Metal sliding fire-proof doors.

Kaylo 1800 or Kaylo 1200, (both 20 lbs.) - Fire doors, fire-resistant partition panels using various surfaces; wood plastic or metal. Dimensionally stable wood door (non-fire door).

Kaylo 1200 or occasionally K-1800, (both densities) - Process equipment panels.

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**Although fire rating is not involved, the high dimensionally stable performance of Kaylo Core can be utilized at competitive or lower costs.

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uses

Kaylo Core Material is principally used as a core material of laminated structures where the faces or laminates are applied with adhesives and as the core of structural shells or envelopes where the Kaylo Core Material is simply inserted in the open spaces and held by its own contact or by such conventional methods as clips or other attachments.

Kaylo Core has a wide-range of useful properties that afford benefits beyond its basic purpose as a fire-resistant material.

physical properties

NOMINAL DENSITY (p.c.f.)

Kaylo-1200	Kaylo-1800
20	20
12	13

UNDERWRITERS' RATING: Listing (40U8.13)

Flame spread	0
Fuel contributed	negligible
Smoke developed	0

HIGH STRENGTH

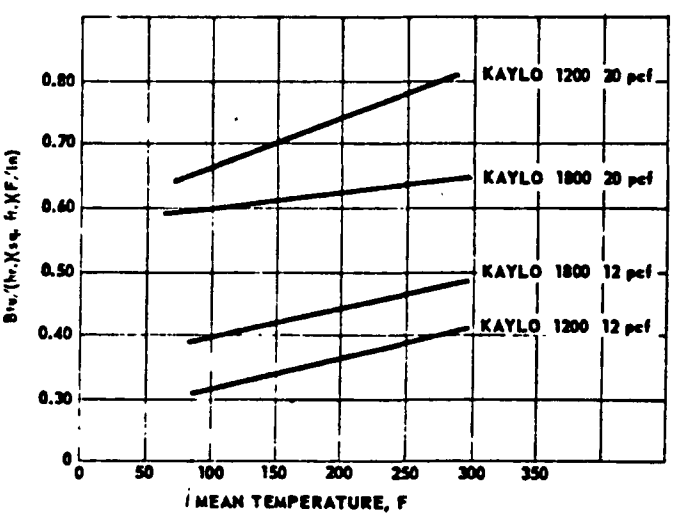
Kaylo-1200

Density	Compressive Strength	Flexural Strength
20 p.c.f.	375 psi (Minimum) @ 10% deformation	175 psi (Minimum)
12 p.c.f.	100 psi (Minimum) @ 5% deformation	40 psi (Minimum)

Kaylo-1800

Density	Compressive Strength	Flexural Strength
20 p.c.f.	375 psi (Minimum) @ 10% deformation	175 psi (Minimum)
13 p.c.f.	75 psi (Minimum) @ 5% deformation	50 psi (Minimum)

CONDUCTIVITY CURVES



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design information

GOOD INSULATION VALUE - At low mean temperatures, Kaylo Core Material is one of the most efficient structural mineral insulations. At high mean temperatures it affords insulating values equal to those of most products which would be used for insulating purposes only.

DIMENSIONALLY STABLE - The dimensions of Kaylo Core Material changes little with variances in moisture content. Thousands of laminated structures, in use over periods ranging up to twelve years, have maintained exceptional dimensional stability and freedom from warpage.

LOW MOISTURE ABSORPTION - Kaylo Core Material is relatively porous to water vapor transmission and is slightly hygroscopic. From bone dry, it will pick up moisture in high humidity atmospheres until it reaches an equilibrium condition of 6% moisture content by weight. Both characteristics resemble those of wood, but there is no warping due to moisture content as with wood.

When used as a thermal insulation subject to condensation within the insulation, the warm side should be provided with an effective vapor barrier.

HIGH WET STRENGTH - Kaylo Core Material, like most other insulating materials, is not intended to serve immersed in water or exposed to extremely damp or humid conditions. Its flexural strength when wet is reduced only moderately.

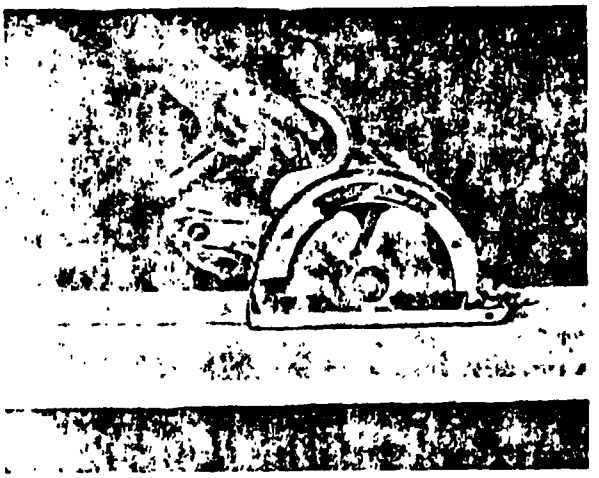
SIZES

	Kaylo-10		Kaylo-20	
	20 p.c.f.	12 p.c.f.	20 p.c.f.	13 p.c.f.
Length (in.)	36	18, 36	36	18, 36
Width (in.)	18	3, 6, 12, 18	18	3, 6, 12, 18
Thickness (in.)	1-1/2 - 3 increments of 1/16	1, 1-1/4, 1-1/2, 2, 2-1/2, 3, 3-1/2, 4	1-1/2 - 3 increments of 1/16	1, 1-1/4, 1-1/2, 2, 2-1/2, 3, 3-1/2, 4

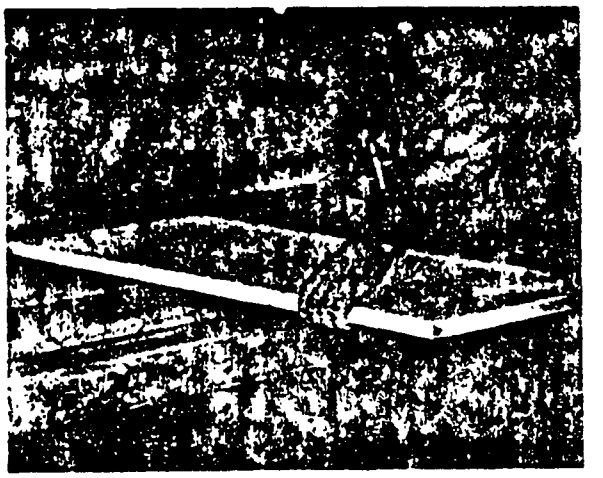
GOOD WORKABILITY - Kaylo Core Material is responsive to woodworking tools. It can be sawed with a hand saw or power saw, can be routed, tongue and grooved, sanded, and in fact, run through most woodworking equipment, particularly if heavy duty cutting edges are used.

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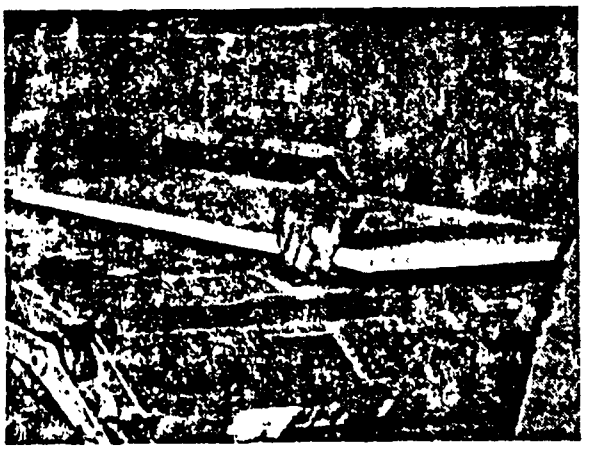
Kaylo Structual Insulating Block is readily cut with portable power saw.



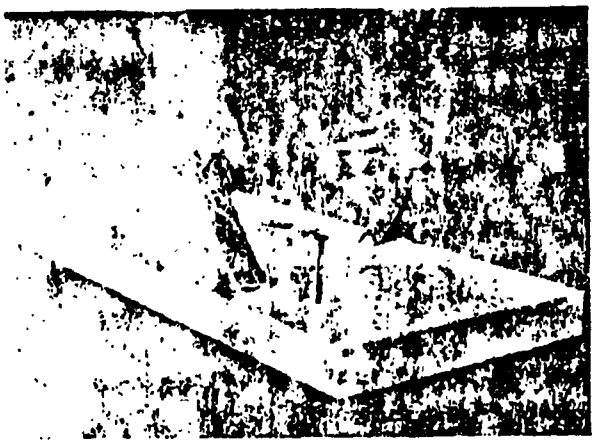
Kaylo Block can be processed with woodworking equipment.



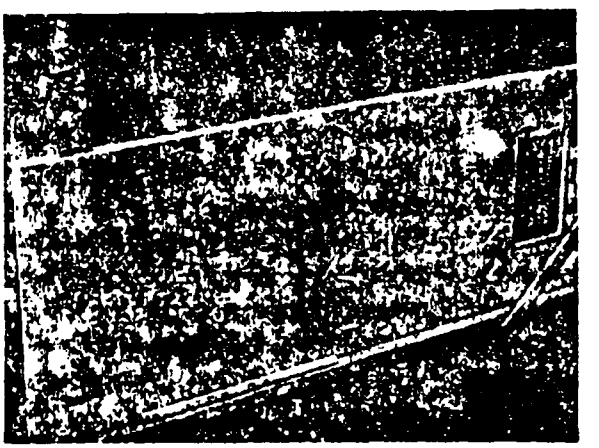
Has many cutting characteristics similar to those of wood.



Adaption of horizontal grinder doing work of both planer and sander.



Can be nailed. Cement-coated nails resist withdrawal best.



Flush veneer door with Kaylo Core installed by regular methods.

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Fabrication

Lamination over a Kaylo Insulation Core - Almost any face material may be bonded to Kaylo Structural Insulating Block surfaces. Bonding agents can be selected to meet the requirements of the particular facing---also to satisfy the service requirements of the finished product---and still offer some choice in curing procedure.

General Requirements - Manufacturing techniques and procedures have been worked out in detail, and these along with technical advice, testing facilities, and promotional assistance are available from Owens-Corning. For general information though, the following procedures are recommended to those who are considering the use of Kaylo Core Material in a structural sandwich.

All core pieces must be brought to close tolerance in thickness. If a bonded core unit is to be produced, the entire unit may be sanded mechanically on both sides to bring all of the laminating surface to a plane. With individual pieces of core, they must be made plane to tolerances consistent with the type of face materials used and the specifications for planeness of the finished sandwich. Kaylo Core Material is manufactured to a finished tolerance of -0, -1/16 tolerance thickness.

In laminates for which requirements for fire resistance are to be met, it is generally necessary to use tongue-and-groove construction for combustible or low-melting point faces. For faces able to resist fire and its effects, tongue and grooving may not be necessary. If tongue and grooving is used, the depth need not exceed 1/8 inch, but the width of the tongue should be relatively great, on the order of 3/8 inch or more. Such construction is intended to minimize transfer of heat through joints by radiation.

The behavior of panels in fire and in the subsequent fire hose stream of water depends not only on the core but on the face and edge materials and on details of the assembly. Where warping of the panel in fire is an important factor to minimize, the tongue and groove joints mentioned above provide an articulating action between core pieces without disrupting the unity of the panel.

Treatment Prior to Lamination - Kaylo Core Material is porous and due to the finishing operation, is slightly dusty. To obtain better adhesion, a primer is recommended. Several kinds of primer may be used, but they must be compatible with the slight alkalinity of Kaylo Core, and the molecular size of the primer must permit penetration of the solid phase into the pores of the core. Frequently, when solutions of large molecule materials are used as primers, the solvent penetrates the core, leaving the solid phase on the surface with little bond strength. One of the easiest primers to apply is a mixture of phenolic resin diluted with alcohol and water which may be sprayed or applied with a conventional glue spreader. Such a primer dries rapidly and successive units may be handled as easily as primed units.

The face materials applied to the core usually require preparation to provide good bond in the laminate. Metals must be degreased and be clean at the time of laminating; wood must be smooth and not contain excess moisture, plastic and cement products must be smooth and plane when pressed.

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In any case, the face materials and the overall design must be suitable for the exposure in service anticipated. While Kaylo Core is not water-soluble and its properties are not destroyed by wetting, it has little heat insulating value when wet, and in the wet state is subject to frost action. Consequently, the design and use must be such that the core remains dry in order for the panel to function as intended. Fire hand assistance is available from Owens-Corning regarding the types and use of primers.

Adhesives - Kaylo may be bonded using most available adhesives, but like all laminates, it is advisable to choose an adhesive which will take advantage of the strengths of the components. The tensile strength of Kaylo Core Material is well in excess of 100 psi. Users of Kaylo Core Material will find it advantageous to work with their suppliers of adhesives and to specify the properties required.

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Where to buy

Kaylo Core Material

Available from authorized distributors located in principal cities. Consult the yellow pages of your classified directory for their location or call your nearest Fiberglas Branch Office listed below.

Albuquerque, New Mexico	CH	3-4583	Milwaukee, Wisconsin	DI	4-3811
Anchorage, Alaska	BR	5-8344	Minneapolis, Minnesota	FR	7-1730
Atlanta, Georgia	JA	3-6491	Mobile, Alabama	HE	2-4411
Baltimore, Maryland	SA	7-0234	Nashville, Tennessee	AL	4-9210
Birmingham, Alabama	TR	1-2723	New Orleans, Louisiana	MA	2821
Boise, Idaho		2-3102	New York, New York	PL	9-3810
Boston, Massachusetts	HU	2-1937	Oklahoma City, Oklahoma	JA	8-4468
Buffalo, New York	TL	3-4123	Omaha, Nebraska	GL	3291
Charleston, West Virginia	DI	3-7094	Peoria, Illinois	PE	4-3232
Charlotte, North Carolina	ED	4-6864	Philadelphia, Pennsylvania	LO	4-3133
Chicago, Illinois	RA	6-0102	Phoenix, Arizona	AL	8-4541
Cincinnati, Ohio	AV	1-1173	Pittsburgh, Pennsylvania	AT	1-7191
Cleveland, Ohio	MA	1-6451	Portland, Oregon	CA	2-1378
Columbus, Ohio	HU	6-9418	Richmond, Virginia	EL	5-5703
Dallas, Texas	RI	1-3982	Rochester, New York	BR	1-1888
Dayton, Ohio	AX	3-3155	Rock Island, Illinois		8-1190
Denver, Colorado	AC	2-3126	North Sacramento, California	WA	2-5467
Des Moines, Iowa	AT	8-4273	St. Louis, Missouri	MA	1-6822
Detroit, Michigan	LI	7-8000	Salt Lake City, Utah	EL	9-5247
Evansville, Indiana	HA	5-5124	San Antonio, Texas	CA	4-7673
Fort Wayne, Indiana	EA	4635	San Bernardino, California	TU	8-3496
Fresno, California	AD	3-7227	San Diego, California	CY	7-3751
Grand Rapids, Michigan	CH	3-3697	San Francisco, California	UN	1-4721
Greenville, South Carolina	CE	9-4279	San Jose, California	CY	5-0321
Hartford, Connecticut	CH	7-1301	Seattle, Washington	MA	2-4335
Houston, Texas	JA	6-1851	Spokane, Washington	KE	5-3575
Indianapolis, Indiana	CL	5-4147	Syracuse, New York	GR	4-4646
Jacksonville, Florida	FL	9-7491	Tampa, Florida		8-0183
Kansas City, Missouri	PL	3-7725	Toledo, Ohio	CH	8-6741
Knoxville, Tennessee	KN	5-4421	Washington, D. C.	NA	8-0724
Los Angeles, California	RA	3-9781	INTERNATIONAL		
Louisville, Kentucky	ME	4-8384	N. Y. City	PL	9-3810
Memphis, Tennessee	FA	7-6116	Panama, Republic de Panama		3-2062
Miami, Florida	FR	7-2671	San Francisco, California	UN	1-4721

OWENS-CORNING FIBERGLAS CORPORATION

Industrial and Commercial Construction Materials Division, 717 Fifth Avenue, New York 22, N.Y.

General Offices, Toledo 1, Ohio. Pacific Coast Division, Santa Clara, Calif.

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