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MITSUBISHI INTERNATIONAL CORPORATION

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MITSUBISHI NEWYORK

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NEW YORK, N.Y. 10022

TELEPHONE:
(212) 605-2000

*Ruth,
Pls send attached
reply form. J*

DATE Sept. 24, 1982

OUR REF. No. L-427

Mr. Arthur D. Schnizer
Vice President, Research & Development
Bird & Son, Inc.
Washington Street
East Walpole, MA 02032

PLAINTIFF'S EXHIBIT

BIR-935

Dear Mr. Schnizer:

The Shikoku Kaken Kogyo Company, Ltd. (SKK), one of Japan's leading coating chemical and fine chemical companies, has developed, patented and commercialized an innovative, lightweight foaming material that is non-flammable, heat resistant, waterproof, soundproof, insulating and durable.

FOAM CERABON is a completely inorganic material that is easily foamed by mixing two components together and then sprayed, trowelled or poured at low temperature. It is being sold in Japan to the construction industry for use in buildings, warehouses, plants, ships, and the like, for the following main applications:

- 1) Fireproof protection on folded metal plate
- 2) Fireproof protection on iron frame pillar
- 3) Heat-insulation on concrete walls
- 4) Heat insulating and fireproof partition
- 5) Backup insulator for precast concrete
- 6) Firedoor
- 7) Fireproof coat on urethane foam
- 8) Insulation and fire proofing between two concentric plastic or metal pipes

The primary merits of FOAM CERABON are as follows:

- 1) Complete non-combustibility
- 2) High heat resistance
- 3) Heat insulating
- 4) Lightweight
- 5) Soundproof
- 6) Good dew condensation resistance
- 7) High adhesion rate
- 8) Excellent resistance to thermal cycling

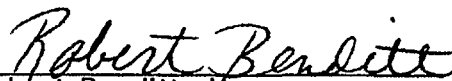
MITSUBISHI INTERNATIONAL CORPORATION

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Page 2
Mr. Schnizer

On behalf of Shikoku Kaken Kogyo Company, Ltd., we at Mitsubishi International Corporation are pleased to offer FOAM CERABON for either product sales or for licensing in the United States. After you have had a chance to read the enclosed Project Note, we would appreciate it if you would return the enclosed reply form, indicating your interest.

Thank you very much for your cooperation.

Sincerely yours,


Robert Benditt, Manager
Technology & Development

RB/gr
Enclosures
CC: TOK/VT-D



JAMES W. JACKSON
R & D MANAGER - ROOFING

MITSUBISHI INTERNATIONAL CORPORATION

P L Y F O R M

ast Walpole, MA 02032
phone: 617-668-2500

Technical Services Department

M C E R A B O N

- (1) NAME:
- (2) TITLE AND DEPARTMENT:
- (3) COMPANY NAME:
- (4) ADDRESS AND TELEPHONE NUMBER:
- (5) YOUR INTEREST: please mark (A), (B) or (C)
 - (A) Interest in receiving samples ☐
 - (B) Interest in meeting with our representative ☐
 - (C) No interest *at this time* ☒
- (6) If possible, please state intended application area and approximate market size.
- (7) Any other questions or comments.

Thank you very much for your kind cooperation.

BIRD 013891

PROJECT NOTE

FOAM CERABON

Robert Benditt

Manager

Technology & Development

Mitsubishi International Corporation

(212) 605-2334

I. THE COMPANY

Shikoku Kaken Kogyo Company, Ltd. (SKK), is one of Japan's leading coating and fine chemical companies. Formed in 1955, its main product lines are:

- Inorganic Polymer Coatings for Buildings
- Organic Composite Textural Coatings
- Inorganic Silicate Baking - Type Coatings
- Inorganic Foaming Insulator at Ambient Temperature (FOAM CERABON)
- Wallpapers
- Paints and special coatings

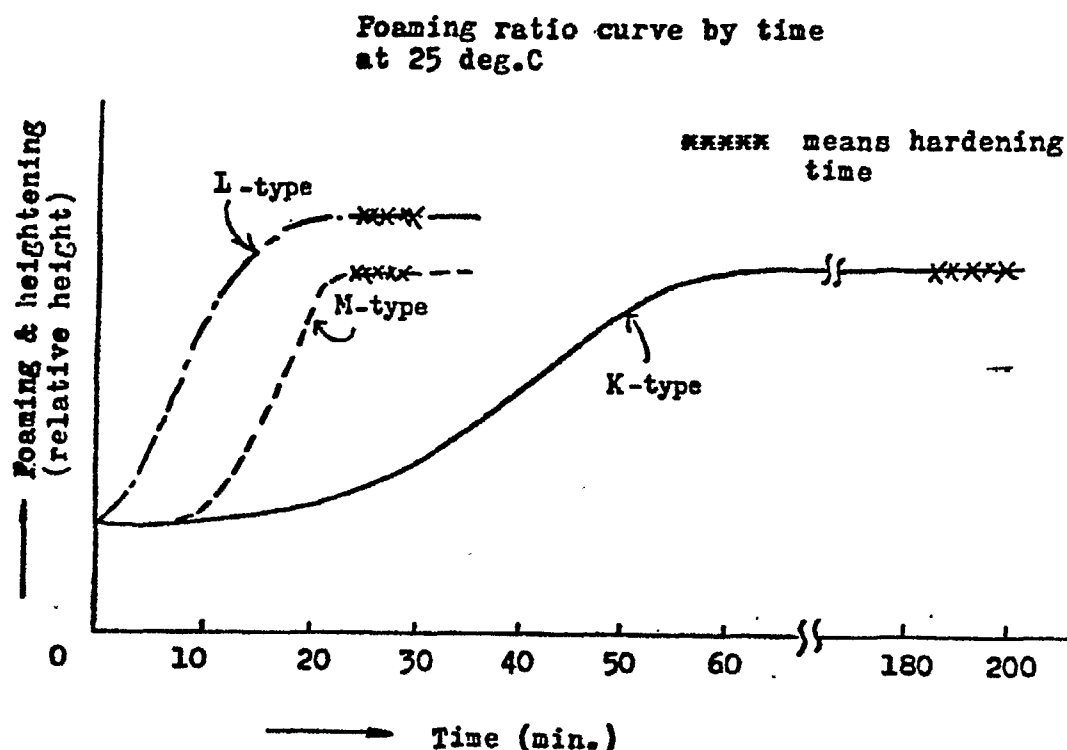
II. THE PRODUCT

FOAM CERABON is an inorganic, lightweight construction material that foams and hardens after a simple mixing process. It presently comes in three types depending on the application and the properties desired.

Typical properties of the three types are as follows:

	Type M	Type K	Type L
Slurry property	Alkaline	Alkaline	Acid
Bulk density	0.30	0.35	0.10-0.80
Foaming ratio	3.3	3.0	1.2-10.0
Compressive strength (kg/cm ²)	3.0-6.0	7.0-10.0	1.0-10.0
Thermal conductivity (kg/cm ²)	0.048	0.074	0.06-0.15

The foaming ratio curve is as follows:



III. THE ADVANTAGES

Non-Combustibility/High Heat Resistance

Because of its completely inorganic composition, it is non-combustible, smokeless, and has high heat resistance; i.e., 1000°C.

The following comparative fire test was performed with urethane, styrene and FOAM CERABON.

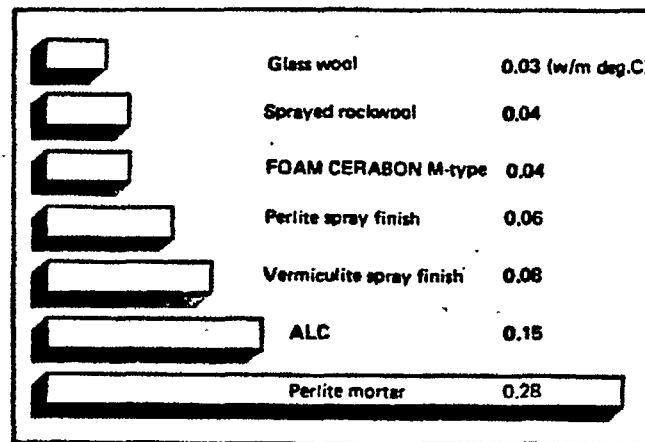
Test Piece	Test Result
Urethane foam (20 mm)	Immediately ignited with smoke
Styrene foam (20 mm)	Immediately melted and collapsed
FOAM CERABON (10 mm)	No ignition and no smoke

Excellent Insulation Properties

Owing to the many fine pores in the matrix, it has superior heat insulating properties and stable, low thermal conductivity from cold to extremely hot conditions.

The thermal conductivity of some typical heat insulators follows:

Thermal conductivity of typical heat insulators

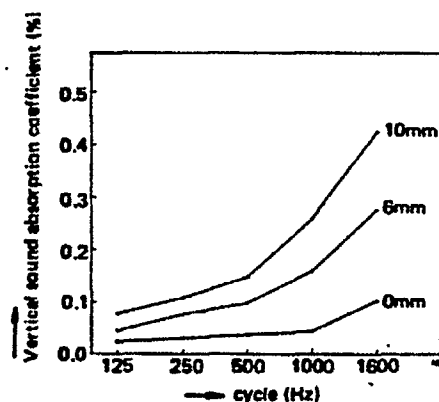


Lightweight

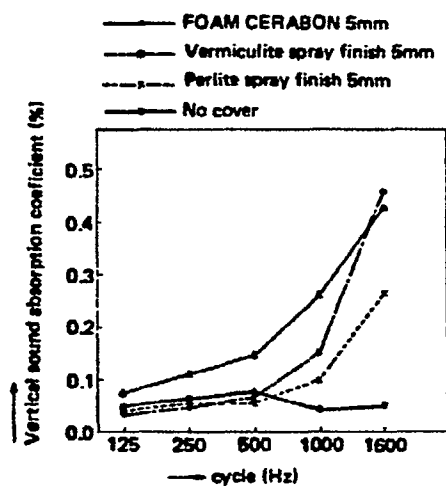
Type M is typically only one seventh the weight of concrete, and Type K is typically one sixth.

Soundproof

The following graph shows the sound absorption versus sound frequency for various thicknesses of FOAM CERABON on asbestos sheet.



The sound absorption of typical insulators on asbestos sheet is shown in the following graph.



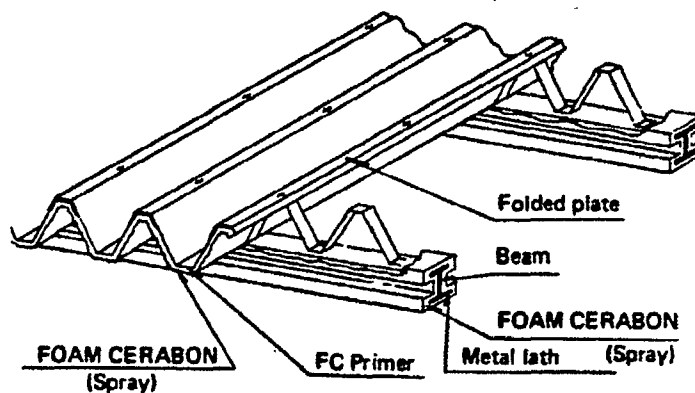
High Adhesion Rate

The following tabulation compares the adhering strength of several heat insulating materials to concrete, mortar and organic forms.

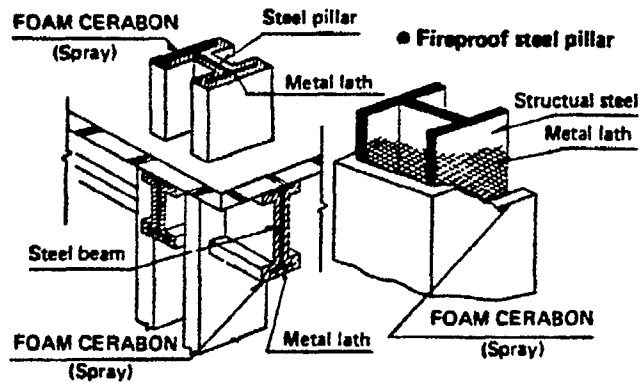
Heat Insulating Material	Adhering Strength
FOAM CERABON (Type M)	0.6 kg/cm ²
Sprayed Rockwool	0.05 kg/cm ²
Perlite Spray Finish	0.10 kg/cm ²
Vermiculite Spray Finish	0.10 kg/cm ²

IV. THE USES

Fireproof Protection on Folded Metal Plate Roof

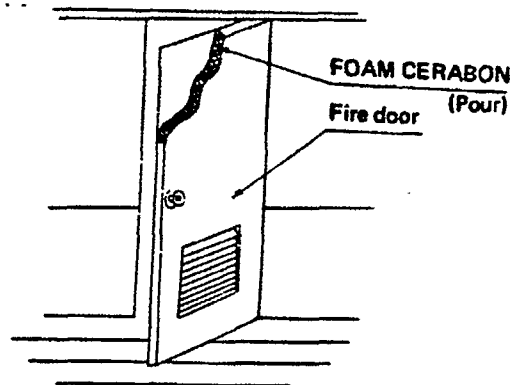
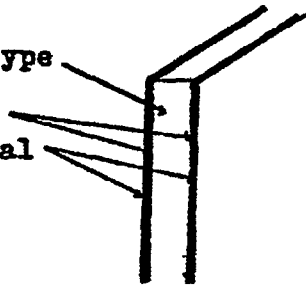


Fireproof Steel Pillar and Beam

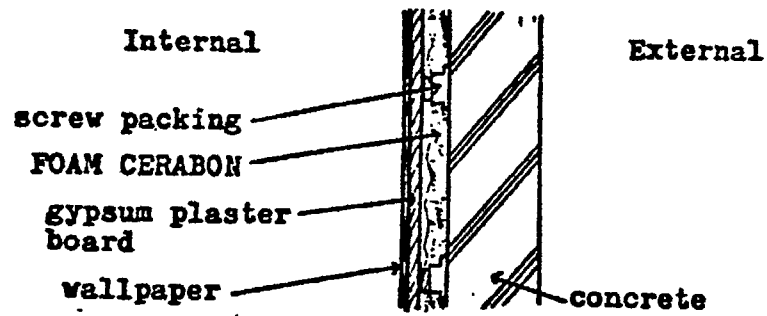


Fire Door

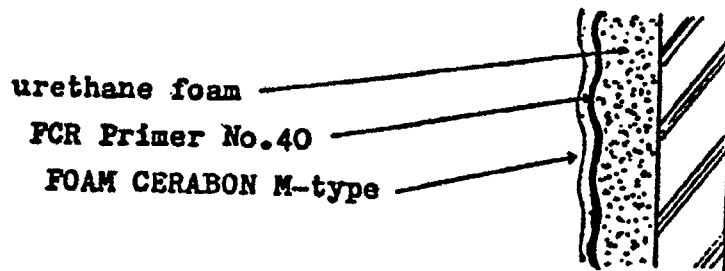
FOAM CERABON K-type
adhesives
finishing material
(timber, etc.)



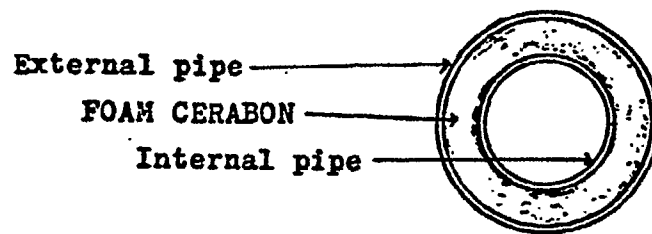
Heat-Insulating Concrete Wall Structure



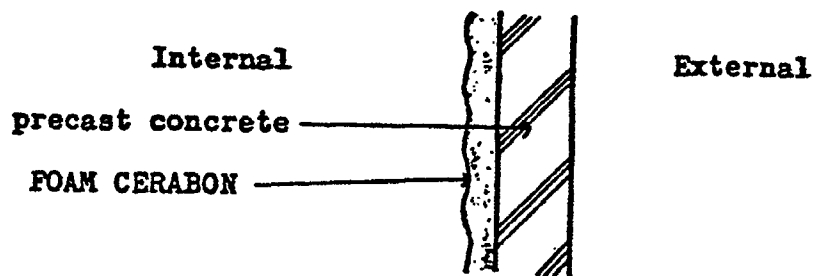
Fireproof Coat on Urethane Foam



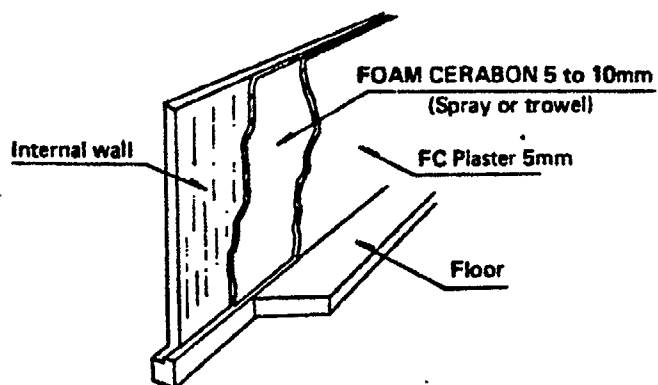
Double Pipe Insulation and Fireproofing



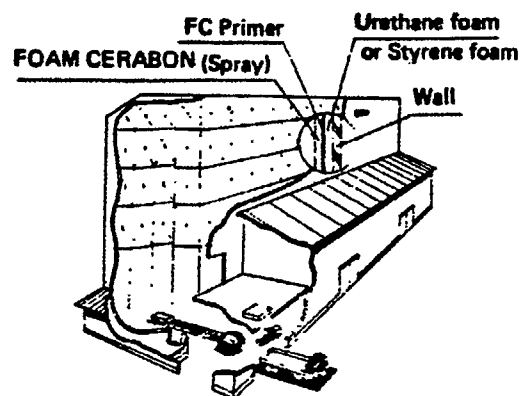
Backup Insulation for Precast Concrete



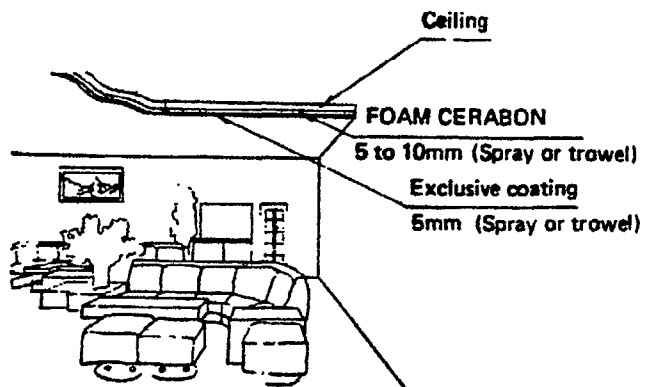
Condensation Protection on Internal Wall



Airconditioned Warehouse Insulation



Room Insulation



Heat Insulating and Fireproof Partition

