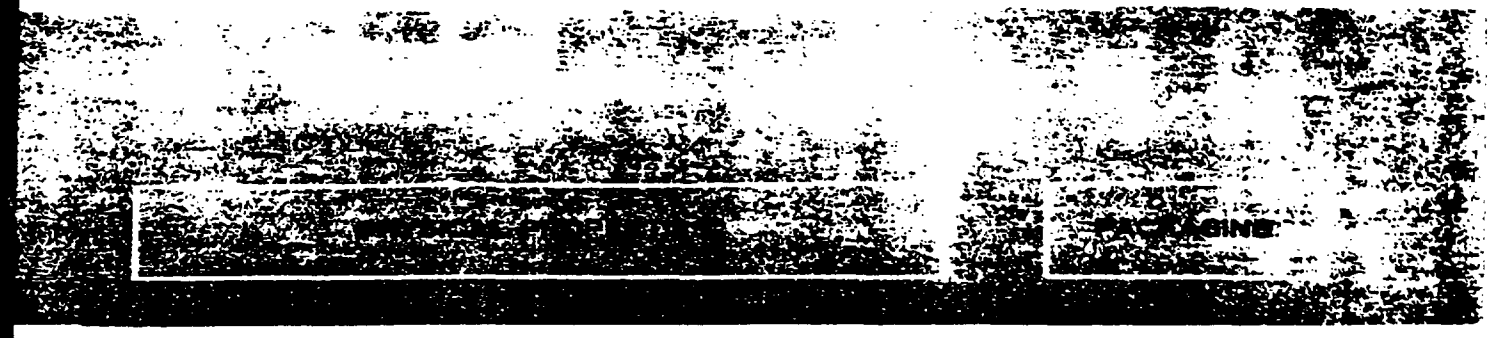
PLAINTIFF'S
EXHIBIT
K-1557

# INSULATING FIRE BRICK
## Specification Data



| | JM-3000 | JM-28 | JM-26 | JM-23 | JM-20 | JM-1620 |
|---|---|---|---|---|---|---|
| Temperature Limit | 3000F** | 2800F** | 2600F** | 2300F** | 2000F** | 2000F***<br>1600F** |
| Approximate Density | 65 pcf | 58 pcf | 51 pcf | 44 pcf | 33 pcf | 31 pcf |
| Transverse Strength | 200 psi | 175 psi | 140 psi | 130 psi | 100 psi | 80 psi |
| Cold Crushing Strength | 400 psi | 300 psi | 210 psi | 200 psi | 150 psi | 120 psi |
| Linear Shrinkage | †0.8% at 3000F | 1.0% at 2800F | 1.0% at 2600F | 0.3% at 2300F | 0.0% at 2000F | 0.0% at 2000F |
| Reversible Thermal Expansion | 0.5-0.8% at 2000F | 0.5-0.8% at 2000F | 0.5-0.8% at 2000F | 0.5-0.8% at 2000F | 0.5-0.8% at 2000F | 0.5-0.8% at 2000F |

| Type | No. of Brick per Carton |
|---|---|
| JM-3000 | 20 |
| JM-28 | 20 |
| JM-26 | 25 |
| JM-23 | 25 |
| JM-20 | 25 |
| JM-1620 | 25 |

*The figures given in this table are average values obtained in accordance with accepted test methods.
**Back-up or exposed. ***Back-up only.
†24-hr Simulative Service Panel Test; all others 24-hr soaking period.

DEFENDANT'S
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OE-128

## COMPLIANCE WITH GOVERNMENT SPECS

JM-20 complies with MIL-B-16305A, Class A

## STANDARD SIZES

| Type | Size |
|---|---|
| JM-3000<br>JM-28<br>JM-26<br>JM-23<br>JM-20<br>JM-1620 | Accurately sized in all standard 9 in. shapes of the 2½ and 3 in. series, as well as special shapes. |

## THERMAL CONDUCTIVITY

| | MEAN TEMPERATURE, F | | | |
|---|---|---|---|---|
| | 500 | 1000 | 1500 | 2000 |
| JM-3000 | 3.22 | 3.30 | 3.37 | 3.46 |
| JM-28 | 2.55 | 2.80 | 3.06 | 3.32 |
| JM-26 | 2.22 | 2.44 | 2.68 | 2.93 |
| JM-23 | 1.51 | 1.91 | 2.31 | 2.70 |
| JM-20 | 0.91 | 1.10 | 1.29 | – |
| JM-1620 | 0.77 | 1.02 | 1.27 | – |

CONDUCTIVITY: BTU IN. PER SQ FT PER F PER HR


**Johns-Manville**

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*Offices in all large cities*

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Johns-Manville

PRODUCT INFORMATION

**type:** Brick

**temp limit:** 3000F

# J-M INSULATING FIRE BRICK

**DESCRIPTION:** Johns-Manville produces six types of Insulating Fire Brick to provide operators and builders of high temperature equipment six opportunities to get the one insulating fire brick that's right for a given service.

Each type of J-M Insulating Fire Brick has the correct balance of thermal and physical properties for its recommended service. All six types offer light weight, low conductivity and high structural strength.

Made from high quality refractory clays (plus alumina in the case of JM-3000), these insulating fire brick contain a carefully graded organic filler which is burned out during manufacture to give a uniform, controlled pore structure.

**AVAILABLE TYPES:**

JM-3000*—for temperatures to 3000F exposed.

JM-28—for temperatures to 2800F exposed.

JM-26—for temperatures to 2600F exposed.

JM-23—for temperatures to 2300F exposed.

JM-20—for temperatures to 2000F exposed.

JM-1620—for temperatures to 1600F exposed; to 2000F back-up.

*JM-3000 Insulating Fire Brick is the newest of the six types. It provides long-life insulation at a full 3000F, in back-up or direct exposure service, and is molded from specially selected kaolin clays plus alumina.

**USES:** Recommended for use as refractory lining or as back-up insulation behind other refractory protection in kilns, furnaces, flues, refining vessels, regenerators, gas producers and mains, soaking pits, stress-relieving furnaces, reactor chambers and similar high temperature industrial equipment.

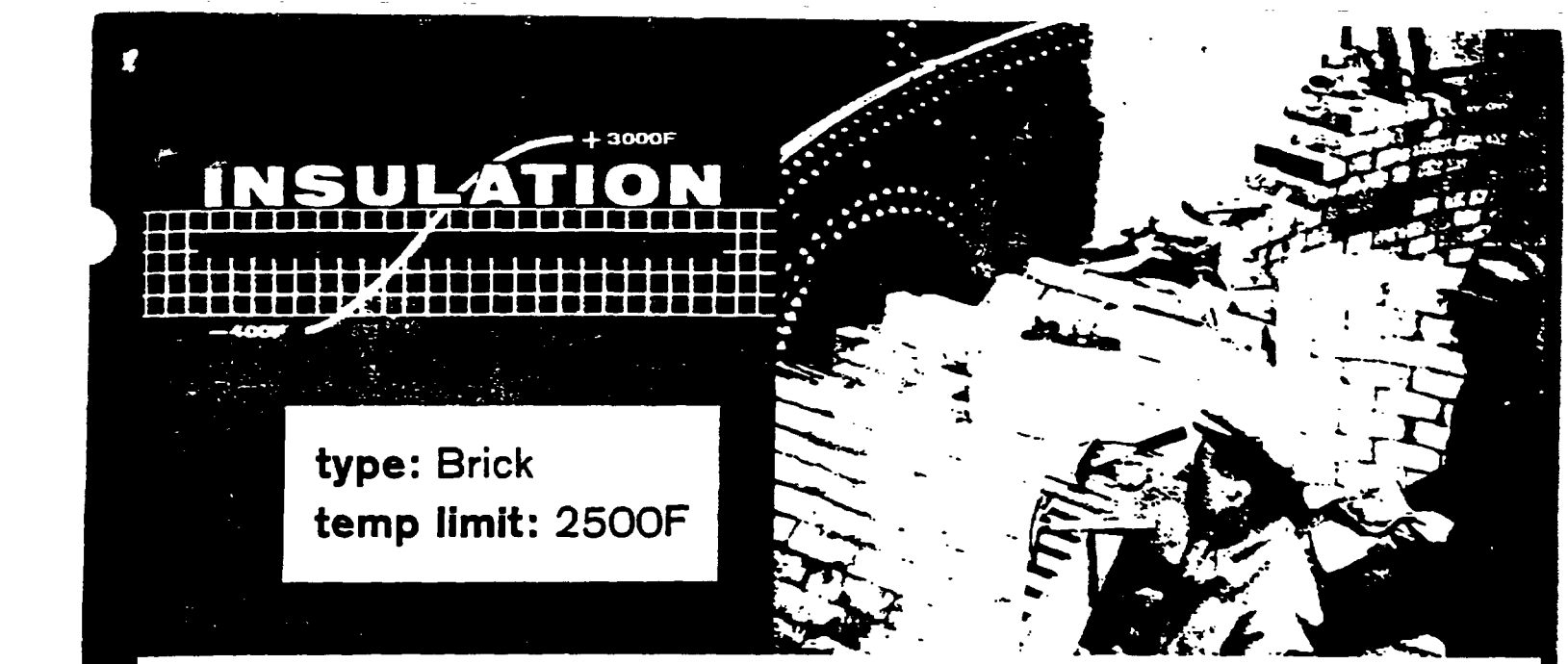
**ADVANTAGES**

**High Insulating Value**

The light weight and high insulating value of J-M Insulating Fire Brick make possible thinner furnace walls, improved efficiency and lower operating costs.

**Quick Heat Up**

Furnaces can be brought up to operating temperatures with unusual speed, resulting in increased production.




# J-M SIL-O-CEL® INSULATING BRICK

■ **DESCRIPTION:** Made from diatomaceous silica, a material composed of millions of microscopic cells that offer maximum resistance to heat flow, Sil-O-Cel Insulating Brick are particularly useful where high load-bearing characteristics are required. Sil-O-Cel Insulating Brick are furnished in three types for use as back-up insulation behind refractory fire brick linings or behind insulating fire brick linings. The new Sil-O-Cel 16L brick may also be used for exposed as well as back-up service.

■ **AVAILABLE TYPES:**

Sil-O-Cel Insulating Brick are furnished in three different types as follows:

Sil-O-Cel Super—for temperatures to 2500F back-up only.

Sil-O-Cel C-22—for temperatures to 2000F back-up only.

Sil-O-Cel 16L—for temperatures to 1600F back-up or exposed.

■ **USES:** Sil-O-Cel Insulating Brick are recommended for use as back-up insulation in furnaces, kilns, hot blast stoves, soaking pits, boiler walls, oil heaters, regenerators, and similar high temperature equipment in the steel, chemical, ceramic, power, petroleum and glass industries.

■ **ADVANTAGES**

**Good Insulating Value**

Used as back-up insulation, Sil-O-Cel Insulating Brick make it possible to reduce the necessary thickness of the exposed refractory as much as one-third. This results in substantial savings in furnace wall construction for all the types of high temperature equipment for which these brick are recommended.

**High Load Bearing Strength**

Sil-O-Cel Insulating Brick are made from diatomaceous silica, a natural fossilized material which imparts to the finished brick great strength. The Sil-O-Cel C-22 brick, for example, has a cold crushing strength of 700 lbs per square inch.