FILE NAME: Railroads (RR)

DATE: 1981

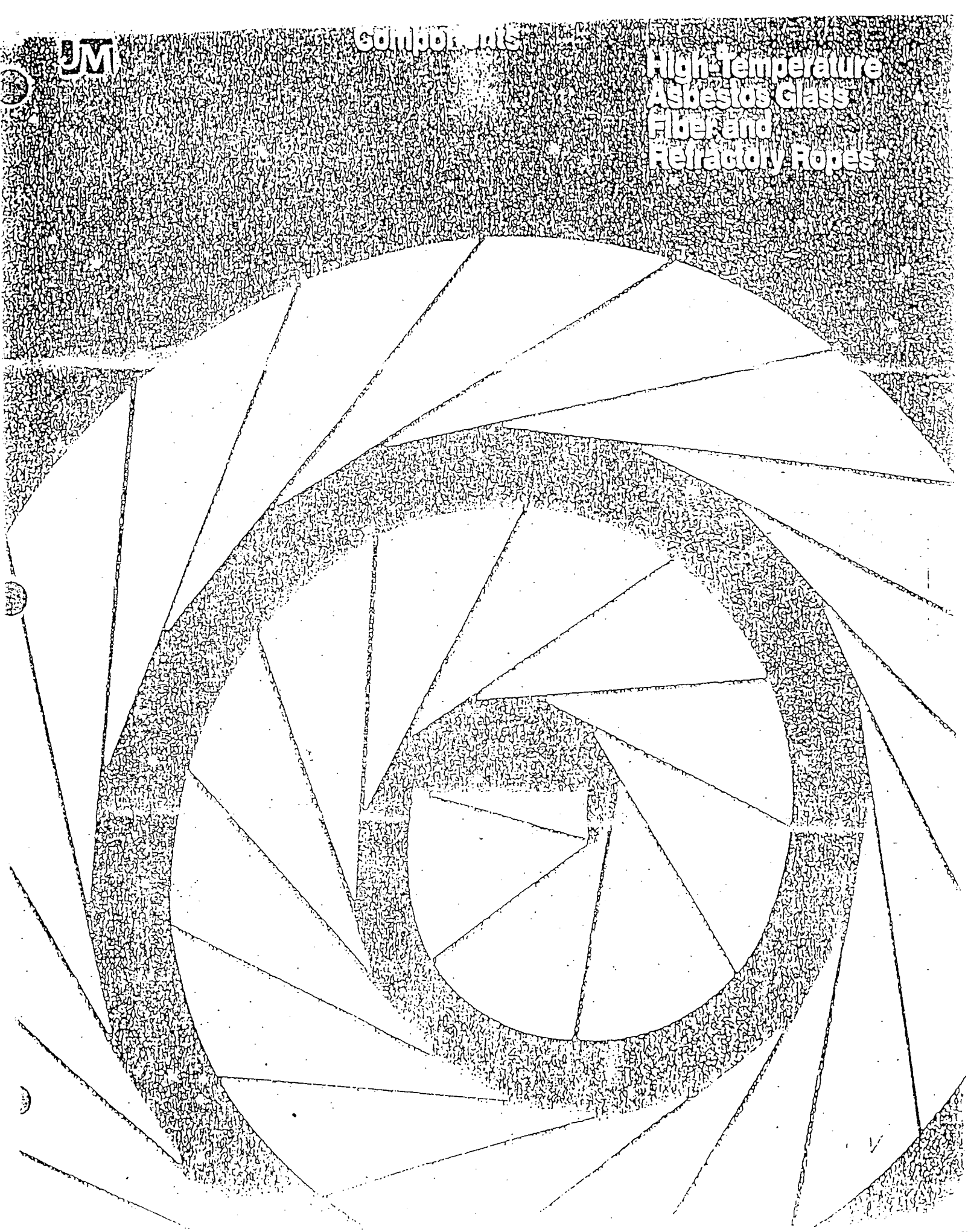
DOC#: RR051

DOCUMENT DESCRIPTION: Published Article from Johns-Manville - High-Temperature Asbestos Glass Fiber and Refractory Ropes

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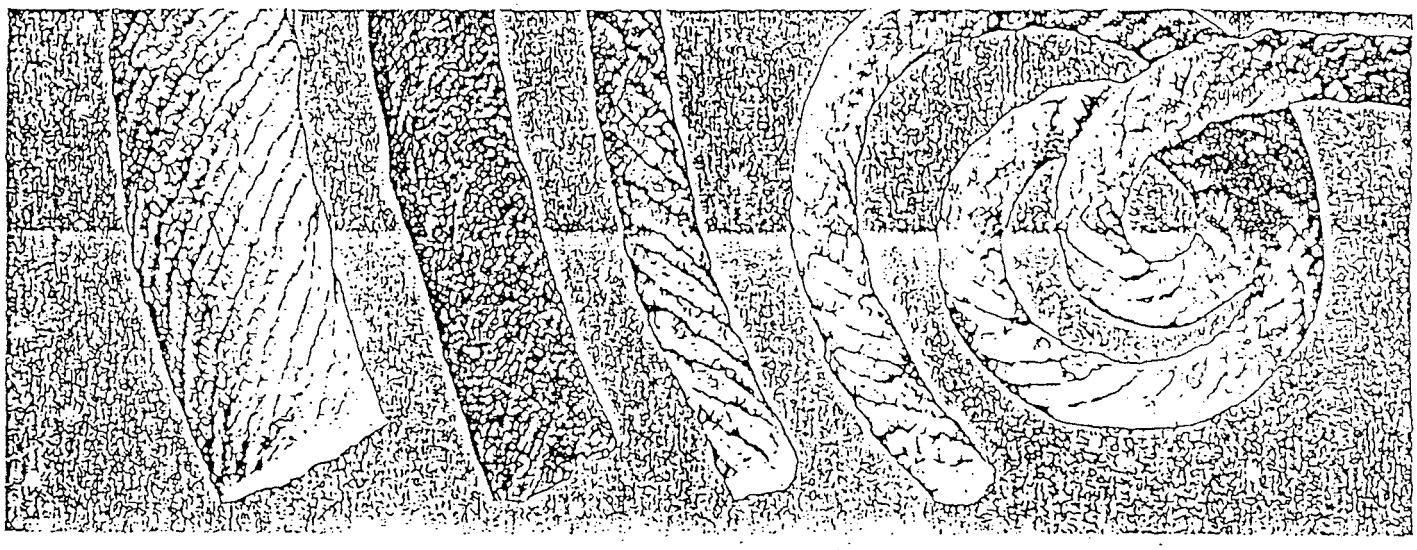
Composite

High-Temperature Asbestos Glass Fiber and Refractory Rope



specify a particular Rope best suited to your operating conditions

Thermo-Chem



The most versatile packing you can buy

Here is a new *simplified* way for you to select and specify Johns-Manville Asbestos, Glass Fiber and Refractory Ropes. Each Style is designated by the temperature range it will handle efficiently, at the lowest cost for the job requirement. This simplification of J-M lines will accomplish two things for you:

1st
It will enable you to specify the right product more quickly and easily.

2nd
It pinpoints your needs and will help reduce your inventory requirements. In addition, it will reduce the possibility of using a product that cannot handle the job.

In the past, sizes under 3/8" have been called "Wick." Generally, these small sizes of rope have been relatively softer and less dense than the sizes 3/4" and up, traditionally designated "Rope." In the new Thermo-Pac line, for added simplicity, all sizes are called "Rope." However, sizes less than 3/8" will continue to be soft and light density products. Where special conditions require it, more lightly twisted and dense ropes in sizes less than 1/2" can be furnished on Special Order.

Ropes are Basic to Industrial Plant and Marine Maintenance

The Style Number indicates the top temperature limit that the style will handle. This will prove most economical for the job.

Thermo-Pac 500	Service to 500F
Thermo-Chem 770	Service to 750F
Thermo-Pac 1000	Service to 1000F
Thermo-Pac 2300	Service to 2300F
Thermo-Pac 2700	Service to 2700F

Asbestos fiber is used in ropes for the temperature ranges up to 1000F; above that, Refractory filaments are the base fibers.

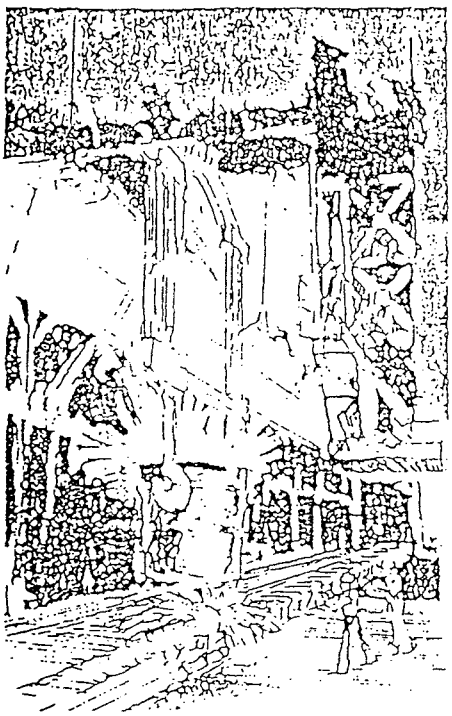
They are the ideal general-purpose packings, whether for emergency packing and gasketing where other materials are not available, or where the shape or condition of the equipment will not allow the use of less pliable, less adaptable materials.

These ropes are extremely versatile in that size can be reduced or increased—simply by separating the strands or building up thickness by twisting several together. They are available in a number of materials to suit your particular requirements—ranging from minus 400F to plus 2700F.

In addition, for severe acid service, Thermo-Chem glass fiber, Style 770 which resists corrosive action by acids, is available for services to 750F.

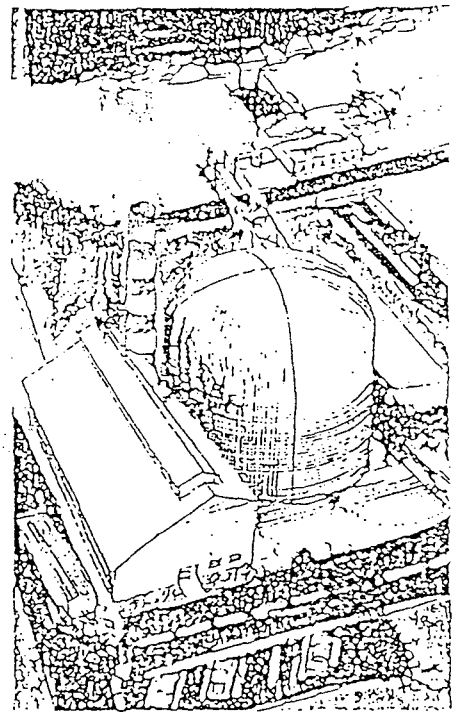
On the following pages, you will find a description of many uses for J-M Asbestos, Glass Fiber and Refractory Ropes.

Here are some of the many services Thermo-Pac and Thermo-Chem Rope can handle efficiently and economically



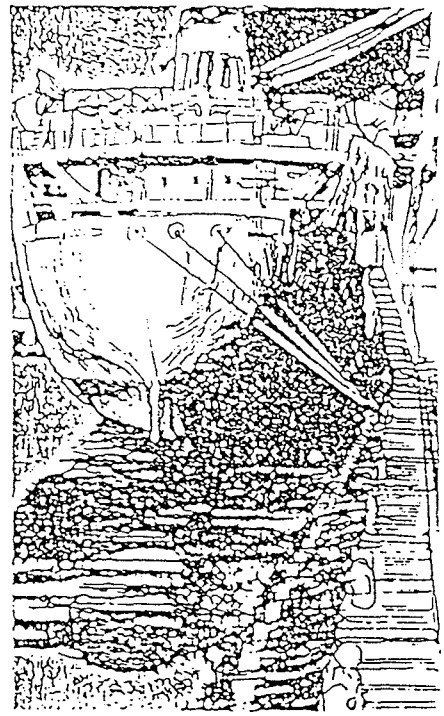
Steel Mills and Foundries

Uses for J-M Thermo-Pac are almost endless. Sealing molds, sealing vacuum-pouring equipment (where leakage can ruin an entire billet), sealing sand molds off from pouring ladles, calking joints in large cores which must be segmented – almost anywhere you look, you will see high temperature rope in use.



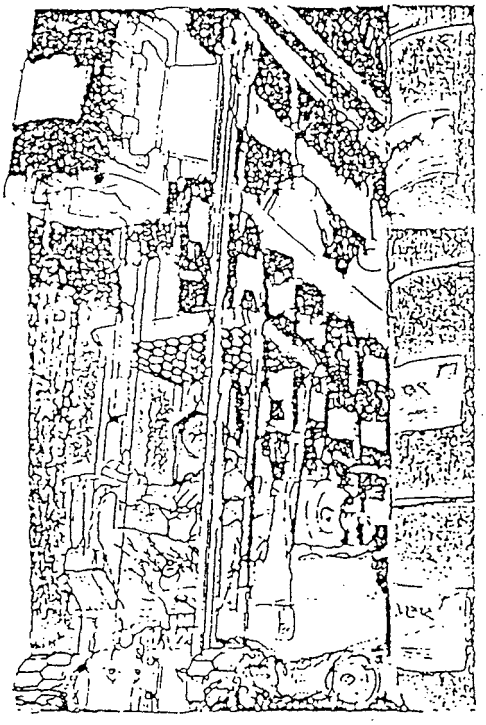
Atomic Energy

J-M Thermo-Pac 1000 is standard in the industry because it withstands an integrated neutron flux of 10^{19} NTV units.



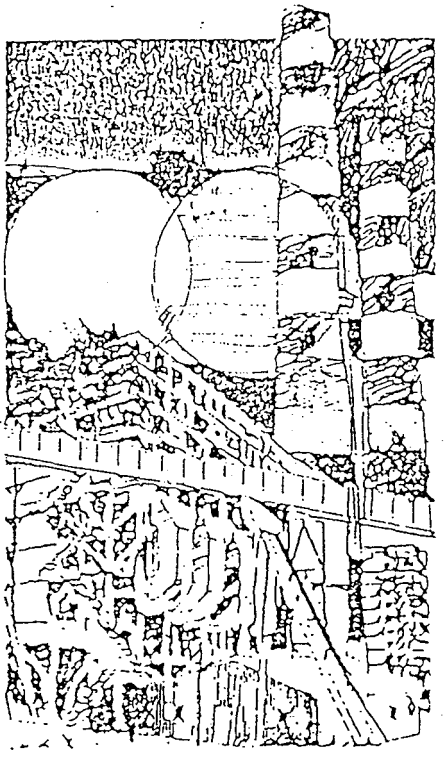
Marine Service

J-M Thermo-Pac is an essential in the Engine Room for general boiler service such as calking, filling and expansion joints, wrapping hard-to-reach steam lines. In emergencies, it is ideal for quick repair of damaged steam lines. On diesel-powered vessels, J-M Thermo-Pac is widely used for wrapping exhaust pipes, often "smoothed-off" with a coating of J-M Asbestos Cement.



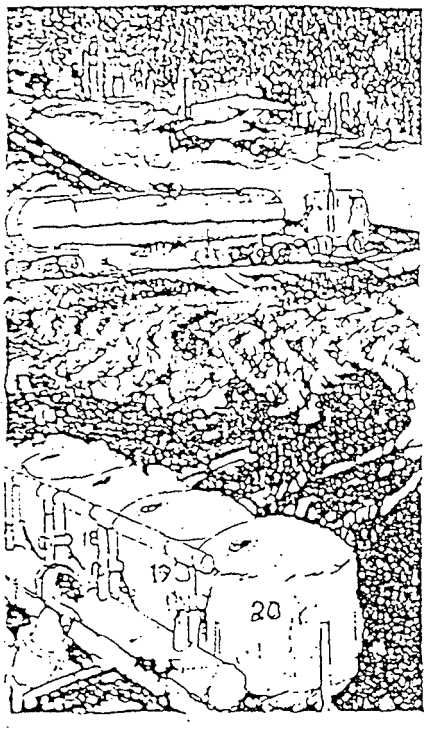
General Industry

Anywhere heat sealing is required, whether heat-treating furnaces, boilers or processing operations, J-M Thermo-Pac is recommended and widely used.



Power Plants

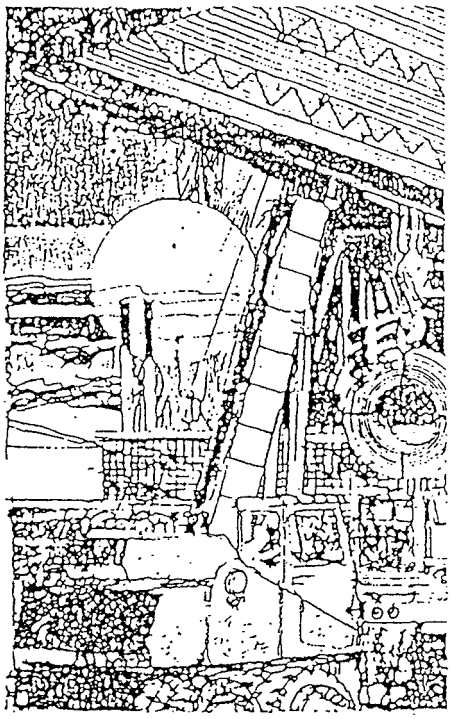
Between boiler walls and brick-work to allow for expansion and contraction, wrapping steam and exhaust lines where space limitations preclude formed insulation, covering small ducts, calking hard-to-reach spaces, insulating hot pipes passing through fire-walls and bulkheads—there are literally hundreds of applications for various J-M Thermo-Pac Ropes. It is the standard for use in grooves for door sealing, between boiler sections, expansion joints and in handling hot gases.



Chemical Industries

J-M Thermo-Pac 1000 is successfully used as calking rope for bell and spigot joints in chemical lines. Because it contains no organic components, it is used as yarning rope for water lines. In addition to its heat-resistance, the chemically inert characteristics have made it a "standard" in other chemical-handling operations such as packing for carboy-stoppers, and in Cryogenic services, and other applications where this property is required.

Johns-Manville Thermo-Chem glass fiber rope Style 770 is recommended for the most severe acid service (one example is for underground chemical sewers).



Aluminum Plants

Anywhere the control of heat and sealing is needed—heat-treating ovens, grooves for door sealing, pouring ladles, vacuum seals on crucibles, and in many other dry heat-sealing applications, J-M Thermo-Pac is the recommended sealing material.



Domestic Appliances

Throughout the Appliance Industry—on heaters, furnaces, incinerators and hot water heaters—in grooves between boiler sections, as door or lid seals, in furnace casings, on oil burner nozzles, and in gaskeling of hot air furnace pipes—J-M Thermo-Pac is a standard.



Special Applications

Manufacturers and users are constantly finding new applications for J-M Thermo-Pac. Examples: door seals on high-temperature dust collectors, seal between a 1000 watt electric bulb and the outer casing of outdoor floodlights, cushioning for acid carboys in crates, seals between cars in brick kilns, cushioning for Pyrex glass in a metal frame to compensate for unequal heat expansion, wipers to remove excess zinc in galvanizing sheet metal and wire, insulating "bubble-trays" in fractionating towers of petroleum refineries—and *countless* other uses!

Thermo-Chem glass fiber rope, Style 770, is an excellent substitute for Thermo-Pac 500 where asbestos is not desired.

Thermo-Chem rope

Packings for Door Sealing on Heat Treating and Curing Operations

Thermo-Pac 500	Commercial Grade White Chrysolile Asbestos Fiber
Thermo-Chem 770	Glass Fiber
Thermo-Pac 1000	Pure (98/100%) White Chrysolile Asbestos Fiber
Thermo-Pac 2300	Refractory Alumina-Silica Fiber
Thermo-Pac 2700	Refractory Alumina-Silica-Chromia Fiber

Cross-Reference to Previous J-M Styles

With the introduction of the new J-M Thermo-Pac and Thermo-Chem line, users of J-M Asbestos Ropes will find the following table helpful. It provides a cross-check from old style numbers to the new ones. Other styles, not listed below, will be continued, but the ones listed below are *standard*.

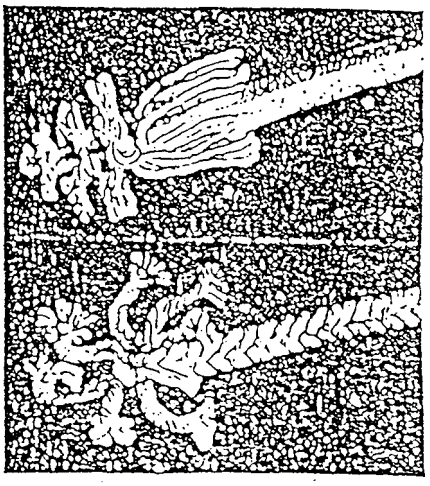
Thermo-Pac 500—Styles 195, 4195, 4196
Thermo-Chem Glass Fiber—Style 770

Thermo-Pac 1000—Styles 4200, 4202
Thermo-Pac 2300—Style 4300
Thermo-Pac 2700—Style 4303

Inventory Recommendations

For simplified, economical inventory, J-M recommends stocking Thermo-Pac 1000 for all operations up to 1000F. This reduces the number of styles carried in inventory. It insures that the one rope carried will handle all services to 1000F. For operating temperatures above this, Thermo-Pac 2300 should be stocked; temperatures above 2300F are unusual and can be met accordingly.

Check your requirements—sizes and temperatures. You will find you can reduce your inventory by standardizing on the J-M Thermo-Pac and Thermo-Chem styles and sizes for your equipment.

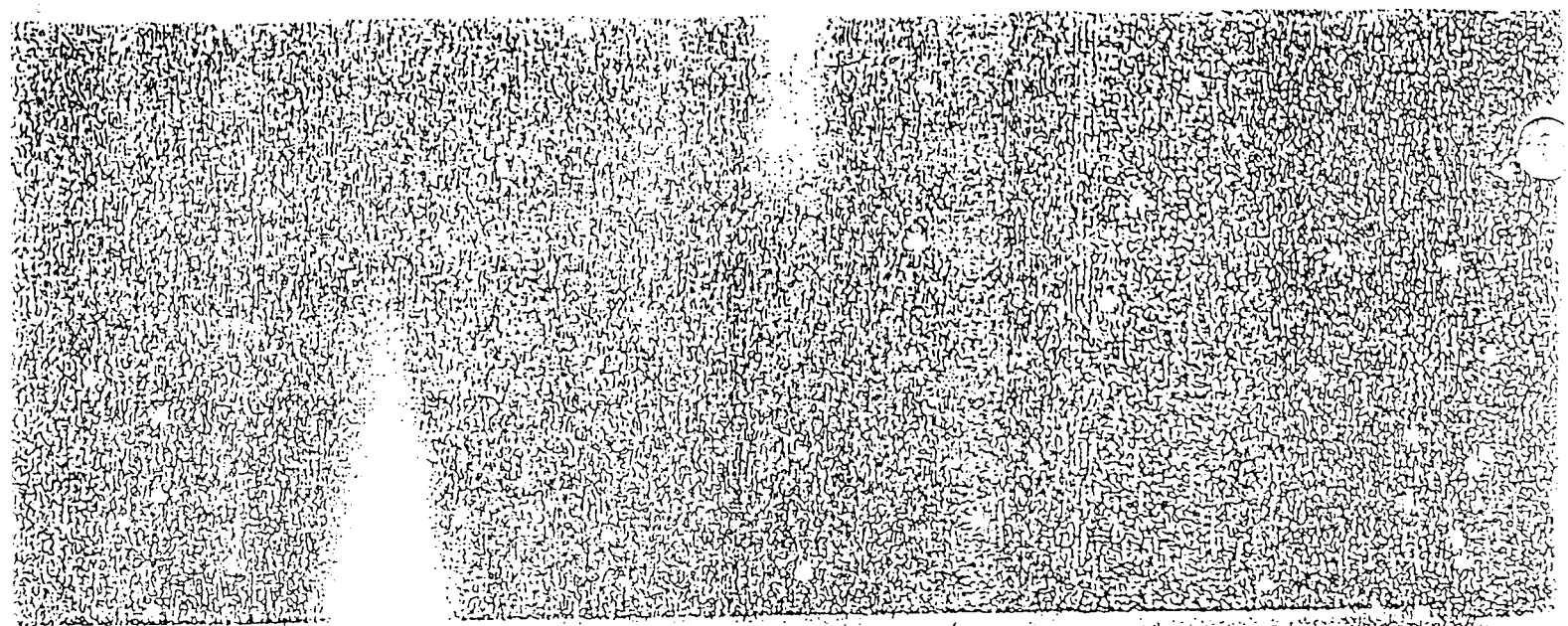


Braided Asbestos Rope

A companion line to J-M Thermo-Pac Twisted Rope is Braided Rope. These ropes consist of one or more braided jackets over twisted cores, or solid braid-over-braid patterns. They are used where a more compact, dense, abrasion-resistant structure is required, such as in partial grooves in furnace or oven doors where the rope is not entirely contained. Depending on requirements, these ropes can be furnished in either round or square cross-section. Certain styles can be furnished in rectangular shape. Asbestos purities range from Commercial to AAA Grade.

Approximate Weight Pounds Per 100 Ft.

Style	1/8	3/16	1/4	3/8	7/16	1/2	5/8	3/4	7/8	1	1-1/4	1-1/2	1-3/4	2
Thermo-Pac 500	1/2	1-1/4	1-3/4	4	7	10	14	20	25	33	50	57	67	80
Thermo-Chem 770	—	—	1/2	1-1/4	—	3	4	5	8	10	15	25	33	50
Thermo-Pac 1000	3/4	1-1/2	2-1/2	5	7-1/2	10	14	20	25	33	50	67	84	100
Thermo-Pac 2300	—	—	3/4	2-1/4	—	3-1/4	5	7	9	15	19	26	36	45
Thermo-Pac 2700	—	—	3/4	2-1/4	—	3-1/4	5	7	9	15	19	26	36	45



The physical and chemical properties of Johns-Manville Thermo-Pac® represent typical average values obtained in accordance with accepted test methods and are subject to normal manufacturing variations. They are supplied as a technical service and are subject to change without notice. Check the Johns-Manville district office to assure current information.

For information on other J-M Products and Systems call Product Information Center at (303) 979-1000

Johns-Manville
Ken-Caryl Ranch
Denver, Colorado 80217

Litho in USA

RMM
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JJ 2/03/81

1" Asbestos

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Johns Manville

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BUYER PINCUS
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