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THERMO-NONCONDUCTING WATER REPELLENT PACKING MATERIAL

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The purpose of the present invention is to provide a fibrous water repellent material which is useful as a thermo-non-conducting packing for pipes in conduits, either those carrying heated gases or liquids, or those carrying cold gases or liquids. Also the packing material may be used in connection with rendering refrigerators thermo insulated, and also metal furniture wherein it is desired to protect the contents of cabinets, etc. from heat.

The particular characteristic of the present invention resides in the treatment of water-proof fibrous packing material, as examples of which may be stated mineral wool and asbestos, so as to render the fibers, moisture and water repellent.

The material which forms the basis of the present invention is commercial shredded asbestos, mineral wool, rock wool or similar substances which may be described as fibrous mineral material, and the nature of the material with respect to the loose association and unmatted condition of the fibers is such that the fibers may be compacted to a desired degree, to thereby form an efficient packing for pipes as well as the other uses before mentioned.

These materials before mentioned are inherently water-proof, but nevertheless this does not hinder the penetration of moisture and water between the fibers and in the interstices between the fibers, so that a mass of packing, even though the fibers are water-proof, may become water soaked to such extent that its thermo-non-conducting properties are seriously impaired, if not destroyed.

In the present invention by treating the fibers as hereinafter described, the fibers are rendered water repellent, and a mass of the fibers when compacted in the usual manner of use so as to exclude appreciable sized pockets in the compacted mass, will prevent the same from becoming water logged or water soaked as before described.

This invention, therefore, comprises the coating or treatment of the fibers of such materials as mentioned above with a substance such as a fatty acid or metallic soap, including stearates, oleates and palmitates of zinc, calcium, magnesium, lead, etc., which will render the fibers water repellent. My preference for practical reasons being for zinc stearate.

In proceeding with one form of the invention I immerse a mass of fibers in a liquid containing five to ten percent of the stearate. The before mentioned proportions are not conclusive, as more or less may be used, and the solution containing the zinc stearate may be water, or it may be any liquid in which stearate is soluble, such as naphtha.

The wet fibers are then placed in a centrifugal or other machine for abstracting the major portion of the liquid, and after thorough draining are placed in a tumbler dryer and thoroughly agitated and dried.

I have found it desirable to add ammonia to the liquid in which the stearate is dissolved, the amount of ammonia being entirely discretionary, and where ammonia has been used in the drying process it is found it renders the fibrous material more fluffy, particularly where the material is vigorously agitated while the ammonia fumes are being evaporated. Furthermore, the addition of ammonia has a tendency to whiten or bleach the fibers, thus making a product which is more acceptable to the trade.

While, as before stated, the quantity of ammonia may be varied, I have found that a solution consisting of zinc stearate, aqua-ammonia and water, comprising approximately seven parts of stearate, ten parts of aqua-ammonia and one hundred parts of water, is found satisfactory.

While the method before described involves the use of a solution containing a stearate or equivalent substance, there is no intention of confining the invention to the use of such solution, as it has been found that a thorough mixing and agitation of the fibers with a dry or slightly moist zinc stearate or equivalent substance, especially under the influence of heat, will provide an efficient treatment of the fibers.

By practicing either of the methods of treating the siliceous fibrous material, as above described, the result is that the fibers are individually coated with the zinc stearate or equivalent material which renders them water repellent. Furthermore, the resultant product possesses all its original physical characteristics as to unmatted, loosely associated fibers.

Having thus described my invention what I claim is:

1. A thermo-non-conducting packing material, comprising a mass of non-adhering, loosely associated asbestos fibers which have been treated with a soap of a bivalent metal to render them water repellent.

2. A thermo-non-conducting packing material, comprising a mass of non-adhering, loosely associated asbestos fibers which have been treated with zinc stearate to render them water repellent.

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