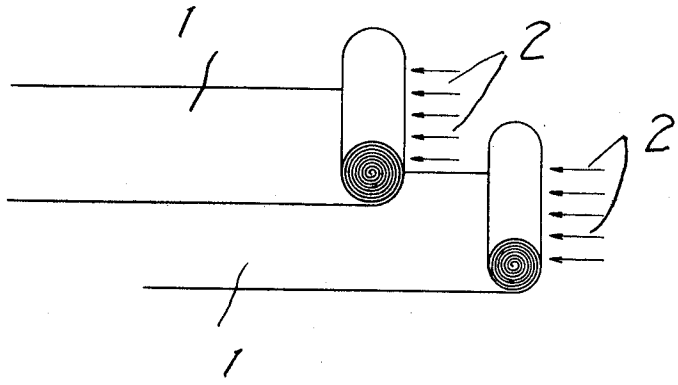
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METHOD OF APPLYING A WATERPROOFING SHEET TO A STRUCTURAL SURFACE

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# METHOD OF APPLYING A WATERPROOFING SHEET TO A STRUCTURAL SURFACE

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## ABSTRACT OF THE DISCLOSURE

The present process is for preparing a waterproofing sheet material coated on one side with asphalt by the application of a hot-air blast thereto to firmly adhere the asphalt to the material just prior to applying said sheet to a structural surface.

This invention relates to a process for making a waterproofing sheet material for use in various building constructions, and is more particularly directed to a process for making a waterproofing sheet comprising one or more bitmuinous layers adhered thereto.

It has hithertofore been a prime necessity in civil engineering, architectural, shipbuilding, and vehicle manufacturing industries to have available an improved method for waterproofing surface treatment of construction materials. Attempts have therefore been made to coat such materials with asphalt, synthetic resins and rubber sheets.

There have been utilized a hot and cold asphalt processing for preparing a waterproofing.

The hot asphalt processing on the one hand involves numerous drawbacks resulting from the heating of the material asphalt at the construction site. For one thing, this processing is inadvisable from the viewpoint of public sanitation because of injurious fume produced by the fusing of the material asphalt in a heating pan at the very site. Furthermore, considerable space is required for placement of the heating pan, fuel and material asphalt at the site, with the result that it is often inevitable to locate them on congested streets and highways, hampering the vehicles and pedestrians passing by. Another disadvantage of this type of asphalt processing lies in the fire hazards possibly occurring while hauling and heating the material asphalt. It must also be taken into account that the overheating tendency of the material asphalt frequently leads to deterioration of roofings and sheetings as well as of the material asphalt coated thereon and further to decrease of the quality of waterproofing, not to mention the possibility of fire hazards caused by the overheating of the material asphalt.

In order to overcome the described drawbacks of the hot asphalt processing, tank rollies are often used for hauling the material asphalt to the vicinity of the construction site, from where the material asphalt is further conveyed to desired spots by means of pumping. However, it will be understood that such a makeshift arrangement can in no way provide a satisfactory solution to the hampering placement of heating implements and materials on heavy traffic roads.

Moreover, a problem of economy will be experienced by the hot asphalt processing for formation of construction materials to be used for multistoried buildings, which require specially long pipings and exceptionally high pressure. The problem of economy also applies to the hauling of the hot material asphalt to a distant site, wherein excess disbursements are necessitated against equipment for maintaining en route the material asphalt at a desired temperature while in transit.

One modification of this hot asphalt processing utilizes a flame projection with the use of a torch lamp. In this instance, however, emphasis should be placed on the hazardous fuel petroleum present that is liable to cause unexpected combustion or ignition. It may be mentioned that the material asphalt is, similarly to the above mentioned hot asphalt processing, not free from fire hazards as a result of overheating of the asphalt.



The cold asphalt processing on the other hand is also disadvantageous in that the toxic and inflammable contents of the bonding agents tend to damage the health of workers and the safety of the constructions.

In the conventional sheet asphalt processing, hot or cold, the use of a brush or a trowel as a coating tool is unfavourable for the quality of waterproofing, because marks, unevenness and voids are produced on the finished surface of the sheet asphalt.

As regards the waterproofing with use of a rubber sheet suffice to say that there is no assurance of safety work due to the use of inflammable bonding agents.

Employment of synthetic resins as the waterproofing material is not recommended as they do not provide adequate waterproofing, since considerable hair-line cracks of a tortoise-shell-like appearance occurs after extended periods of time.

It is therefore an object of the present invention to provide a method for preparing a sheet asphalt which is completely free from objectionable marks, unevenness and voids.

It is another object of this invention to provide a method for forming a layer or layers of satisfactory quality on a surface or surfaces of an asphalt coated sheet.

It is a further object of this invention to provide a method for firmly adhering the asphalt to the surface of said sheet which is previously coated with the material asphalt.

It is a further and another object of the invention to provide a method for blasting a hot air onto the reverse side of an asphalt coated surface of said sheet so as to furnish an added adhesion of the asphalt coating to this sheet, wherein no bonding agents nor bituminous liquors are used.

Referring to the drawing attached hereto for better understanding of this invention, the hot air **2** ejected from a conventional portable electric hot-air blast (not shown) is blown to the sheet **1** which has been coated with the material asphalt so that the asphalt coated thereon is fused at a temperature of 120° C. to 200° C. and then it is firmly adhered thereto.

It may be apparent from the foregoing description of the invention that a sheet asphalt is prepared with no use of bonding agents that tend to flame up by and during the heating of the material asphalt at the construction site. This invention will prove most advantageous where it is utilized for such constructions as are located at an underground depth and an overground height both in excess of 500 meters, eliminating any requirements of hauling vertically heavy and troublesome materials and implements. It is to be noted that the manpower and electric power required for a variety of construction works can be reduced to a minimum by the use of the waterproofing sheet asphalt prepared according to this invention.

While the invention is described in detail in a specific form, other modifications within the spirit and scope of the invention will be apparent to those who are skilled in the art. Hence, the invention is to be understood to be limited only as indicated in the appended claim in which the intent is to set forth all the novelty over the prior art.

We claim:

**1.** A process for applying a waterproofing sheet coated on one side with asphalt to structural surfaces comprising heating the asphalt coated side by blowing electrically

heated air having a temperature of from 120° C. to 200° C. at the asphalt coated side to cause fusion of the asphalt and immediately applying said sheet to a structural surface.

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