

November 1992

UNITED STATES

ASBESTOSPRAY corporation

MAY 28TH, 1971

605 BROAD STREET
NEWARK, NEW JERSEY 07102
(201) 642-4330

MR. H.W. SPEICHER - ADMINISTRATOR
WESTINGHOUSE ELECTRIC CORP.
HEADQUARTERS INDUSTRIAL HYGIENE
700 BRADDOCK AVENUE
EAST PITTSBURGH, PA. 15112

DEAR MR. SPEICHER:

WE ARE RETURNING YOUR INDUSTRIAL HYGIENE MATERIAL INFORMATION SHEET WITH THE REQUIRED AREAS FILLED IN. HOWEVER, SO THAT YOU ARE COMPLETELY FAMILIAR WITH ALL OF OUR PRODUCTS AND OUR CONSTANT CONSIDERATION OF HAZARDS WITHIN THE INSULATION INDUSTRY, WE ARE FORWARDING, UNDER SEPARATE COVER, TO YOU OUR DARK BLUE CATALOGUE WHICH DESCRIBES ALL OF OUR PRODUCTS AND THEIR APPLICATIONS. YOU WILL ALSO NOTE THE PHOTOGRAPHS WHICH SHOW HOW CLEAN THE APPLICATION CAN BE WITH PROPERLY TRAINED PERSONNEL.

ENCLOSED, HOWEVER, YOU WILL FIND A COPY OF A RECENT TEST WITH ASBESTOSPRAY HTC, A RECENT SALES BULLETIN ON OUR VERAMOSPRAY PRODUCTS, AND A LETTER FROM THE CITY OF PHILADELPHIA INDICATING AN INVESTIGATION OF OUR PRODUCTS BY THE JEFFERSON MEDICAL COLLEGE OF PHILADELPHIA AND THEIR APPROVAL THAT THE MATERIAL IS NON TOXIC, AND WILL NOT CONTRIBUTE TO ANY HAZARD IF PROPERLY USED. IN ADDITION, WE ARE ALSO ENCLOSING OUR RECOMMENDED PRACTICES WHICH WERE COMMANDED BY THE CITY OF PHILADELPHIA AS A RATHER EFFECTIVE MEANS OF CONTROLLING HAZARDS INHERENT IN THE INSULATION INDUSTRY.

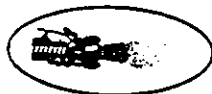
I AM IN THE PITTSBURGH AREA QUITE FREQUENTLY, AND WOULD BE VERY HAPPY TO DISCUSS IN DETAIL OUR WHOLE PROGRAM. HOWEVER, SHOULD YOU HAVE ANY PARTICULAR QUESTIONS, PLEASE DO NOT HESITATE TO ADVISE.

VERY TRULY YOURS,

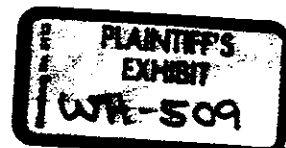
ASBESTOSPRAY CORPORATION

PAUL S. HAGG - GENERAL MANAGER
INSULATION PRODUCTS DIVISION

ES. /RC



03112009



NW88-0005930

IN THE AIRBATHS November 1992

INDUSTRIAL HYGIENE MATERIAL INFORMATION
FORM 39576

LABEL NO. 15820 MAY - 4 1971
Asbestos

WESTINGHOUSE MATERIAL CODE NO. 54251A9

DATE 5-14-71

SUPPLIERS TRADE NAME Asbestospray, HTB Blend

APPROXIMATE PERCENTAGE COMPOSITION: SOLIDS CONTENT 95 % LIQUID CONTENT 5 % DRY STATE, DRIVEN OFF AT ELEVATED TEMPERATURES

APPROXIMATE COMPOSITION OF SOLVENT, DILUENT, THINNER, OR OTHER LIQUID:

AROMATICS:

BENZENE _____ % TOLUENE _____ % XYLENE _____ % OTHERS _____ %
GIVE NAME _____ %

CHLORINATED:

CARBON TETRACHLORIDE _____ % TRICHLOROETHYLENE _____ % PERCHLOROETHYLENE _____ %
METHYLENE CHLORIDE _____ % METHYL CHLOROFORM _____ % OTHERS _____ %
GIVE NAME _____ %

PETROLEUM SOLVENTS:

MINERAL SPIRITS _____ % VM&P NAPHTHA _____ % NAPHTHA _____ % OTHERS _____ %
GIVE NAME _____ %

CYCLIC COMPOUNDS OTHER THAN AROMATICS (GIVE NAME AND PERCENT):

_____ % _____ % _____ %

KETONES (GIVE NAME AND PERCENT):

_____ % _____ % _____ %

ACETATES (GIVE NAME AND PERCENT):

_____ % _____ % _____ %

ALCOHOLS (GIVE NAME AND PERCENT):

_____ % _____ % _____ %

ORGANIC ACIDS (GIVE NAME AND PERCENT):

_____ % _____ % _____ %

OTHER LIQUIDS (GIVE NAME AND PERCENT):

DUST ABLESTINE ADD. 2.5% _____ % _____ %

SOLID CONSTITUENTS:

1. ANTIMONY _____ %	5. CADMIUM _____ %	9. LEAD _____ %
2. ARSENIC _____ %	6. CHROMIUM _____ %	10. MERCURY _____ %
3. ASBESTOS <u>70</u> %	7. CYANIDES _____ %	11. SELENIUM _____ %
4. BERYLLIUM _____ %	8. FLUORIDES _____ %	12. SILICA _____ %

13. OTHERS (GIVE NAME AND PERCENT): LUMITE CEMENT ALL 30 %

14. ALKALI (GIVE NAME AND PERCENT): _____ % _____ %

15. INORGANIC ACIDS (GIVE NAME AND PERCENT):

_____ % _____ % _____ %

16. OTHER INORGANIC COMPOUNDS (GIVE NAME AND PERCENT):

_____ % _____ % _____ %

17. ORGANIC COMPOUNDS OTHER THAN SOLVENTS (GIVE NAME AND PERCENT):

_____ % _____ % _____ %

03112007

NOVEMBER 1962
SPECIAL ADVERTISING SECTION

ASBESTOSPRAY CORPORATION

High Temperature Insulation



NOV 62 0006032

Excerpt from Address delivered by Paul S. Maco at the invitation of the Thermal Insulation Society in Philadelphia, Pa. on December 8th, 1966.

SPRAYED FIBRE INSULATIONS

Sprayed fibre insulations are a means of forming and applying insulation coatings by spraying fibres onto the surface to be insulated. While there are presently several systems involved with the spray process, we shall talk about the systems incorporating the use of 100% African asbestos fibres with hydraulic setting and curing inorganic binders. This system, therefore, is the process of spraying these blended and prepared 100% asbestos fibres with the inorganic binders activated by jets of atomized water onto any surface to be insulated. This system is designed to be a high temperature insulation involving elevated temperatures where block type insulations were and are being used. It is not to be considered for use on units where the surface temperature would normally fall below ambient or that of the surrounding air.

This insulation coating has a "K" factor similar to that of calcium silicate block. However, when in place it has been repeatedly found that the actual ~~solid~~ face has been lower than what it was calculated to be. This is primarily due to the fact that the coating is intimately in contact with the surface to be insulated, and is free from seams which are apt to reduce the efficiency of block-type insulation after it is in place.

The density of sprayed asbestos insulations, while normally applied, will average approximately 12 lbs. per cubic foot. It can be applied so as to range between 9 and 13 lbs. per cubic foot, depending on the nature of the application, and on the hot surface temperature involved.

The compressive strength of these sprayed coatings is about 25% compression at 5-7 lbs. per square inch.

Flexural strength ranges from 9 to 14 lbs per square inch.

Concerning contraction and expansion abilities, it has yet to crack or separate when used within its designed temperatures due primarily to the fact that the insulation is in one piece and normally in direct and intimate contact with the expanding or contracting surface, and, as such, the insulation actually moves concurrently with the surface insulated. This does not occur with rigid block-type insulations.

The question arises why go to a spray-type insulation when there are a multitude of insulations in mat, blanket and block form which have been used throughout the years with knowledgeable results. These results, however, are not always the most desirable, economical or satisfactory. Therefore, a long time ago, actually about 35 years ago in England, the idea developed of applying an insulation coating by some spray method, instead of making a blanket or felt to fit, and then inserting it, impinging or enveloping this surface to be insulated. Some of the requirements were that the insulation coatings applied by the spray process were to be economical, durable and meet the insulation requirements of the material it is to replace.

The first attempts consisted of a unit similar to a textile carding machine, which would take asbestos fibres, previously blended with inorganic binders, card them, and instead of forming a film which became a felt or rove, dropped the opened fibres onto an impeller, which sent them through an air system contained in a flexible hose of approximately 1 3/4" in diameter. These fibres emerged through a bullet nosed tube attached over a standard spray gun, which supplied atomized water to the pretreated fibres just before impinging onto the surface to be insulated. It was found to be rather successful and subsequent refinements in equipment have increased its potential tremendously, so that it has expanded in use since since that time. Not only did it meet the requirements, but set some of its own:

The coating fits perfectly:

The coating eliminates air circulation between the insulation and the surface insulated:

03112081

- The coating has no joints:
- The coating eliminates cuttings which result in waste:
- The coating can be applied with minimum reinforcements, if any:
- The coating thickness can be controlled:

In addition to the above, this same coating aids in fire resistance, anti-condensation, anti-corrosion, anti-drumming and acoustical improvement.

Therefore, based upon the economic and time saving factors, more and more companies, whether they are the eventual user or the constructor, are giving the sprayed asbestos method of applying insulation a very serious look if they are not already one of the users. Recent histories of savings have initiated major programs in some refineries and public utilities on the maintenance end, and also the large generator manufacturers in the original equipment classification. One hundred percent asbestos sprayed insulations are already in the standard specifications of Foster-Wheeler, Babcock & Wilcox and others.

Where is it used?

This coating is used where requirements such as expansion, contraction, vibration, corrosion prevention and convection effects demand a satisfactory yet economical insulation. Sprayed asbestos fibre coatings have proved very successful in meeting these requirements. This process has been used in power generating plants, oil refineries, chemical process plants, metal manufacturing and process plants, where heat conservation, uniform distribution of heat and protection against the effects of heat are important. It is difficult to say why it took so long to finally arrive in the United States. However, acceptance of sprayed asbestos insulations is increasing in leaps and bounds. Specifically, however, sprayed asbestos insulations are not the final cure-all for all our insulation problems. Its use should be seriously considered for intricate surfaces where it is difficult for block, blanket and mat insulations to form an intimate and continuous coating. While in the past, it has been very evident on steam turbines, large diameter breeching and piping, it is also being used on large boiler walls and vessels of sizeable diameters. It is difficult to forecast the ultimate to which the sprayed asbestos insulation process will be used as (a) wherever the process has been accepted on a maintenance level, the customer has used it where it was never considered before, and (b) as new equipment is being designed, so are new insulation requirements, and a sprayed process is continuously being investigated for possible use.

When sprayed asbestos fibres (I like to say, personally, 100% asbestos sprayed fibre insulations), are used it is primarily as a matter of economics. In today's economy we have two principle factors which should play an important part in selecting an insulation coating:

- 1 - Applied Cost
- 2 - Speed of Application

Applied cost: Whether the insulation is to be applied by the maintenance department or a contractor, the cost of material and labor involved with the application has been considered as one for a long time. Recently, however the "system" has been emerging as an important factor. This system involves the insulation and the weather-proofing as well. Without mentioning names, three well-known coating manufacturers have recognized the ease and economics of applying their coatings over sprayed asbestos insulations. One major boiler manufacturer has even gone so far as to develop an enclosure for their package boilers, consisting of fiberglass reinforced with polyester resin. They now intend to enter into competition with metal boiler lagging.

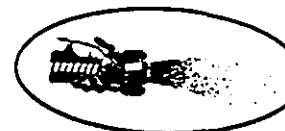
Speed of Application: It must be recognized, where a project demands a minimum time allowed for insulation, the forces of labor could be marshalled and put to work, if they could be found. While there are cases where the application of mats and boards can be faster than coatings of sprayed asbestos, we have heartily recommended the use of those products. However, when elevated temperatures prohibit the use of these products, it must be recognized that when one machine normally operated by two men can apply up to 2,000 board feet per 8 hour day, it has a little merit. As a matter of fact, this same machine can apply a coating of finishing cement which is for the interior applications and as a base for standard weather-proofing on exterior units, thus facilitating a more rapid application of your standard mastic weather-proofing.

03112062

IN RE: ABRAMS November 1992

ASBESTOSPRAY CORPORATION

High Temperature Insulation



880000-0000

Issued: October 26th, 1967

TECHNICAL BULLETIN

Mechanical Reinforcement and Support of Asbestospray High Temperature Fiber Insulations.

Where the surface of the unit to be insulated is such that mechanical support is necessary or where the insulation thickness is such that mechanical support is required, this mechanical reinforcement or support shall be as follows:

Surface to be Insulated	Retention		Applications
	Pins	Others	
Tanks & Vessels Vertical surface of tank more than four (4) ft. in diameter (Mastic Finish)	At least 1/2" longer than specified thickness. 18-24" on center.		4"x4" squares of 1/2" hardware cloth are to be impaled (over pin) into the sprayed fibre after the fibre has been applied and before pressing so that the hardware cloth is depressed 1/4". Secure with speed clip-bend pins into fibre or nip it off. Cover hardware cloth before applying finish coat. See sketch #1 attached.
Vertical surface of tank more than four (4) ft. in dia. (Metal Finish)-Metal hung on or attached to mechanical support.	Of proper gauge & at least 1/2" longer than spec. thickness. 18" on center.	Metal Bands at least 3" wide, no more than 5 ft. apart.	For pins same as above except that pins required for support of lagging shall be as specified. See Sketch #1. Metal bands shall be used where lagging is self supporting and are not dependent for support wholly on the bands.
Tops of Tanks or vessels	When required 24" on center same as above		4" x 4" squares of 1/2" hardware cloth to be impaled onto pin over sprayed insulation as shown in Sketch #1.
Bottoms of flat or conical vessels.	Required on bottoms of all flat or conical units. Pins 12" on center.		4" x 4" squares of 1/2" hardware cloth impaled onto the pins and secured by means of speed clips. Hardware cloth must be impaled onto pins after fibre is applied.

Surface to be Insulated	Retention		Applications
	Pins	Others	
Boilers, Breeching, Duct Work, etc. A1. Top side of any horizontal surface sloped 0°-60° from horizontal.	None	None	None
A2. Between fire brick tile or block wall and steel casing.	None	None	None
B. Any vertical wall with flat lagging directly against insulation & where no severe oil-canning or vibration is anticipated.	Placed on 24" x 24" centers	None	Pins to be bent into sprayed fibres before insulation is pressed.
C1. Any vertical wall with with 1/2" (or larger) gap between insulation & lagging. C2. Any overhanging horizontal surface with lagging directly against insulation	Placed on 24" x 24" centers	4 x 4 Mesh 16 Ga. Galv. wire hardware. Speed clips	4" Sq. Hardware cloth to be impaled (over pin) into sprayed fibres at least 1/2" before insulation is pressed. Snug speed clip to wire cloth. Bend pin tight against clip Respray over speed clip Press fibres
D1. Any overhanging surface with 1/2" (or larger) gap between insulation & lagging D2. Any vertical surfaces with severe oil canning or vibration.	Placed on 18" x 18" centers	No. 20 USS Ga. 1" x 1" Galv. Hex Poultry mesh. Speed Clips	Mesh to be stretched over pressed fibres, lap mesh & wire or twist together. Snug speed clip to poultry mesh. Bend pin tight against clip
E1. Any overhanging surface with severe vibration or oil canning. E2. Overhead roof surfaces in penthouse or header boxes, & Penthouse walls	Placed on 18" x 18" centers	1 1/2" x 3", 16 Ga., 3.6 lb. /sq. yd. exp. metal lath, carbon steel Speed clips	Lath to be stretched over pressed fibre, lap lath & wire together. <u>Hog rings are not acceptable.</u> Snug speed clip to lath. Bend pin tight against clip.

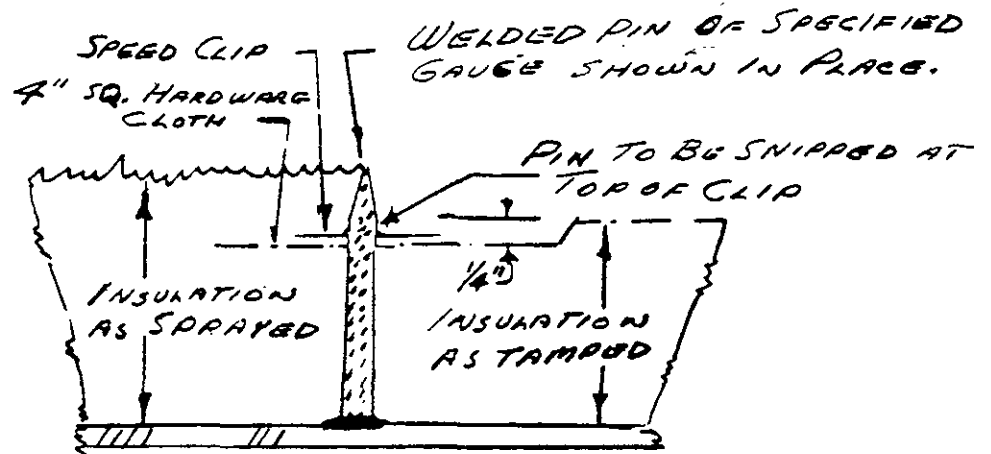
NOTE: All pins used for retention shall be No. 12 USSGA, mild steel (annealed), discharge type. All pins shall be furnished 1/2" longer than specified insulation thickness.

November 1992

IN THE AIRWAYS

SKETCH NO 1
APPLICATION TECHNIQUE
MECHANICAL SUPPORT
USING PINS & HDW. CLOTH

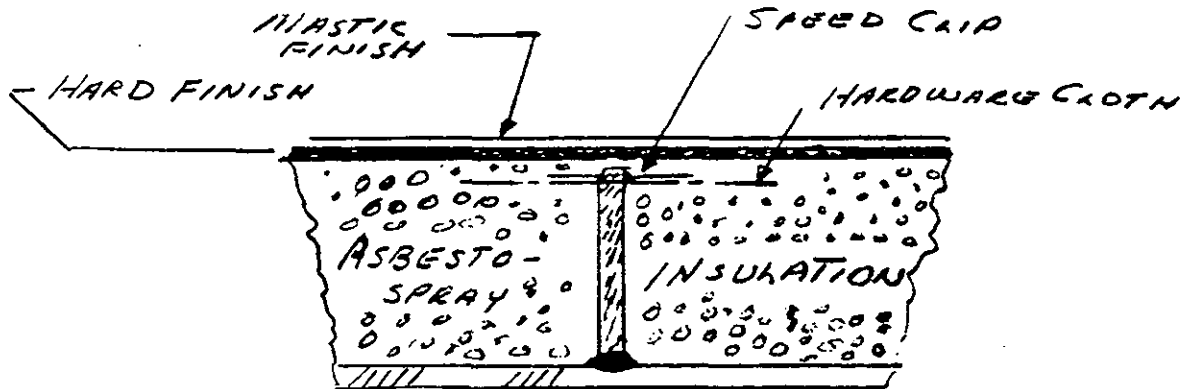
MMBB-0006090



SECTION LEFT INSULATION AS SPRAYED

CENTER SUPPORT DETAIL

RIGHT INSULATION AS TAMPED



SECTION FINISHED APPLICATION