Plants throughout the world are insulated with spun mineral wool block manufactured by the patented process developed by B-E-H and licensed to many companies overseas.

Your local Baldwin-Ehret-Hill Contractor-Distributor has more complete data to answer any questions you might have about Mono-Block and the complete line of B-E-H insulations. Contact him for assistance with your projects.

Or, if you wish, take advantage of the personal service offered by the skilled B-E-H staff. They are ready to help with their technical knowledge and practical experience. Write Baldwin-Ehret-Hill, Inc., Dept. H, 500 Breunig Avenue, Trenton 2, New Jersey.

BALDWIN-EHRET-HILL, INC.

Manufacturers of a complete line of pipe, felt, blanket and block insulation, and insulating and finishing cements, from near absolute Zero to 2100F.

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Houston, Texas 4101 San Jacinto	Temple, Texas 702 E. French St.	LaCrescenta, Calif. 3444 Burrin Way

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INDUSTRIAL INSULATIONS

BH

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BALDWIN-HILL

COMPANY

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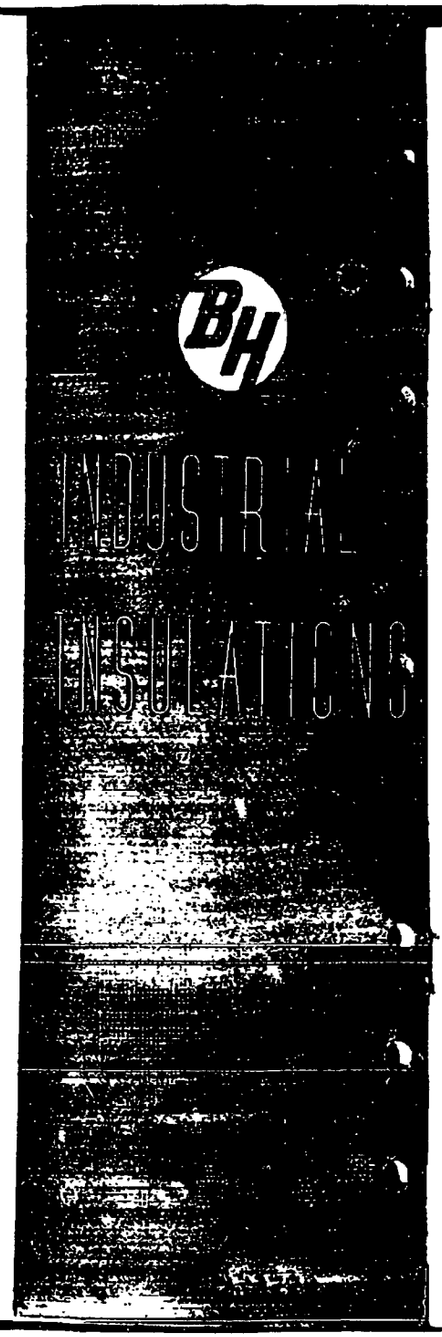

FOREWORD

THE general acceptance of mineral wool insulation in a variety of forms for industrial applications began in the late '20's. It was World War II, however, that brought mineral wool almost universal recognition as an outstanding insulation material for both hot and cold applications. The widespread and satisfactory use of mineral wool during the war in ships, high octane gasoline plants and general industry attests to its value as an efficient, easily applied and permanent insulation.

B-H Insulations have as their base *black* Rockwool which is singularly resistant to heat and moisture. Careful selection of raw materials used in its manufacture, combined with constant checks on all manufacturing operations, insure a uniform product.

One of the many notable characteristics of B-H *black* Rockwool is its resistance to high temperatures. Actually, it withstands 250° to 300° greater heat than most wools, making it particularly effective on high temperature applications.

Having a comparatively low percentage of lime (calcium oxide), B-H *black* Rockwool does not disintegrate. Basic in character, it will not cause or accelerate corrosion. Attesting to this fact is its low percentage by weight of alkali expressed as sodium oxide (Na_2O), which is well under the 0.25 per cent maximum permitted in Government specifications.

B-H *black* Rockwool has a negligible water absorption. This resistance to moisture insures permanence of physical properties and retention of high insulating values, even though exposed to humid conditions.

Our three plants—Trenton, New Jersey; Kalamazoo, Michigan; and Huntington, Indiana, have enabled us to keep abreast of the greatly increased demand for Baldwin-Hill insulating products. We have increased our research facilities both in the laboratory and in the field. This has been done not alone for the control of our products, but also to help work out the individual problems of our customers.

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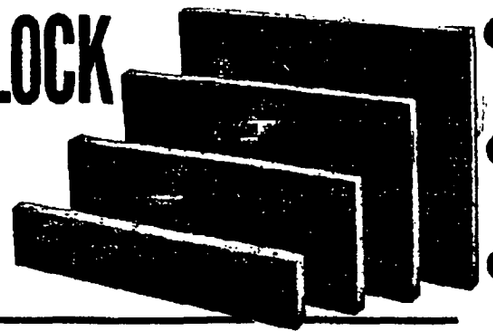
MONO-BLOCK

Effective Over the Full Temperature Range Up to 1700° F.



A ONE block insulation that is effective over the full temperature range up to 1700° F., Mono-Block makes unnecessary the use of two types of insulating blocks and thereby makes possible greater overall efficiency and a substantial saving in installation costs.

Mono-Block is made from B-H *Mock* Rockwool, well known for its resistance to high temperatures. Stability under severe temperature conditions is assured. Because of an unusually low alkalinity factor, the fibres are not affected when exposed to moisture or high temperature.

Mono-Block is a felted block, manufactured under Baldwin-Hill patent (U. S. Patent No. 1865849). This process felts long, straight fibres into interwoven layers, rather than forcing nodules into a conglomerate mass as is common in molded blocks. As a result, B-H Mono-Block is light, porous, and resilient—containing millions of tiny air cells which make possible its unusually high insulating qualities.

Light to handle, B-H Mono-Block cuts easily with a knife in straight lines or odd shapes. Its felted surface yields to such surface irregularities as rivet heads and welds so that it can be pressed close to the area to be insulated without cracking or breaking, thus making possible efficient and quick application. It can be cemented to any clean surface with B-H Bond-Tite until proper mechanical support can be added. It can be fitted readily to curved surfaces of fairly large radii.

Thermal Conductivity—Exceptionally low thermal conductivity, as shown by the adjacent chart, is an outstanding characteristic of Mono-Block. This is made possible by the patented felted process of manufacture. It provides extra insulating protection. A few points taken at random from the chart are:

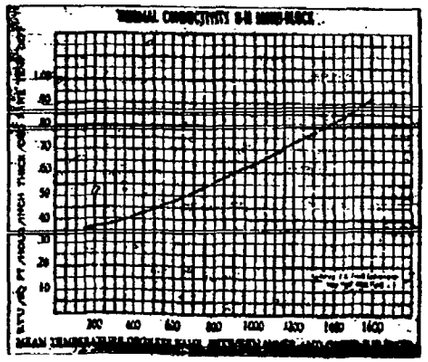
Mean Temperature	*Conductivity*
200° F.	0.370 B.T.U.
600° F.	0.475 B.T.U.
800° F.	0.555 B.T.U.
1000° F.	0.640 B.T.U.

Density—Mono-Block has a density of approximately 20 lb. per cu. ft., which is low in weight for high temperature insulating materials.

Recommended Thicknesses

Hot Face Temperatures

Up to 300°	1 to 1½ in.	800° to 1000°	4 in.
300° to 450°	2 in.	1000° to 1200°	4½ in.
450° to 600°	3 in.	1200° to 1400°	5 in.
600° to 800°	3½ in.	1400° to 1700°	6 in.



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Standard Sizes—Mono-Block is offered in the following standard dimensions:

Thicknesses: 1, 1½, 2, 2½, 3, 3½ and 4 in.
Widths: 6, 12, and 18 in.
Lengths: 18 and 36 in.

Other sizes are available within the maximum dimensions of 4 by 18 by 36 in. at a slight additional cost.

Packages—Mono-Block is packed in high test cardboard cartons containing 36 bd. ft. per carton with an approximate weight of 62 lb.

Uses—B-H Mono-Block is adaptable for insulating:

Steam Boilers
Boiler Water Walls
Duct and Breechings
Fan Housings
Feed Water Heaters
Oil Refinery Towers and Tanks
Drying Ovens
Core Ovens
Heat Treating Furnaces
Annealing Furnaces
Enameling Ovens
Chemical Treating Tanks
Brick Kilns, Waste Heat Flues, and many other types of equipment

LIST PRICES PER SQUARE FOOT

(Subject to Discount)

Thickness Inches	*List Price*	*Thickness Inches*	*List Price*
½	$ .27	2½	$ .488
¾	.27	2½	.75
1	.30	2¾	.85
1½	.38	3	.90
1½	.45	3½	.98
1¾	.55	3½	1.05
2	.60	4	1.20

SPECIFICATIONS

B-H Mono-Block for Vessels, Tanks, Towers, Ducts, etc.

Insulating Materials—All vessels, tanks, towers, ducts, etc., as noted on drawings are to be insulated with Baldwin-Hill Mono-Block of thickness as specified below, securely banded and covered with B-H No. 1 Insulating Cement and Weatherseal in accordance with the following specifications.

Insulation Thickness

See Recommended Thicknesses on page 4.

Preparation—All vertical tanks and towers are to have angle iron supports equal in size to the thickness of insulation welded to the surface of the vessel and spaced six feet apart, starting at the bottom.

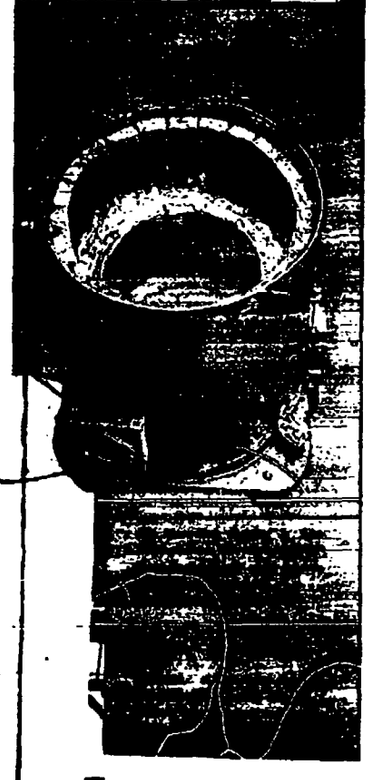
260781

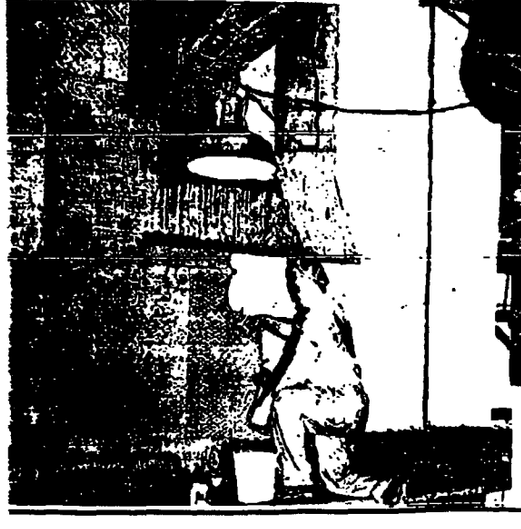
MONO-BLOCK

Application—Apply specified thickness of Mono-Block directly to metal surfaces, cutting to fit snugly around all supports, openings, etc. B-H Mono-Block is to be held in place by applying a thin coat of B-H Bond-Tite to the surface of the block and then apply the block by pressing it firmly against the surface of the vessel. After the total circumference has been filled apply ½-in. by 0.020-in. galvanized steel bands stretched and sealed with ½-in. No. 41 waistrap seals. Spacing of these bands is to be approximately eight inches on centers. (On vessels over six feet in diameter, use ¾-in. by 0.023-in. bands 6 inches on centers.) Space bands on circular heads eighteen inches on centers at outside circumference. Apply one layer of 1-in. by No. 20 ga. galvanized poultry netting, lacing at the joints with No. 16-ga. galvanized lacing wire. Apply a rough coat of B-H No. 1 Insulating Cement to the surface of the insulation, and when dried cover with a finish coat of B-H No. 1 Insulating Cement which has been mixed with 25% of Portland Cement (by weight) and trowel to a smooth surface to make a total surface thickness of ½ in.

For Outside Use—All insulated units exposed to the weather or when subjected to excessive humidity conditions inside buildings are to be treated in the following manner: After the last coat of B-H No. 1 Cement has been applied and allowed to thoroughly dry, another layer of poultry netting is to be stretched and laced tightly, covered by a ¼-in. thick coat of B-H Weatherseal. Thickness of Weatherseal when dried is to be not less than ⅛-in.

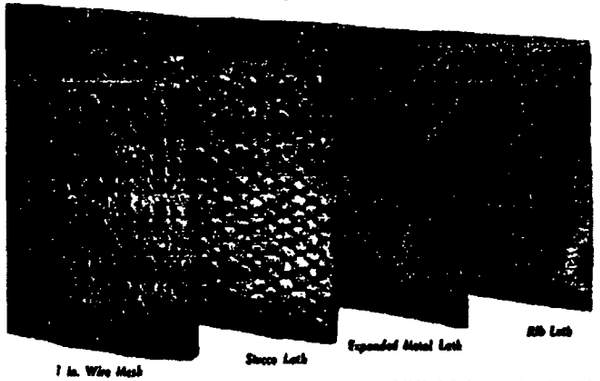






Rockwool Blankets

Insulation for Large Areas—Effective Up to 1200° F.



BALDWIN-HILL Blankets are manufactured by felting B-H high temperature and moisture resistant insulating wool in large flat sheets between different styles of metal fabrics. The wool is carefully felted to insure uniform density and resistance to loosening when handled. The standard sizes containing 8 or 16 sq. ft. make it possible to apply this material on a large area at a minimum cost. In application the soft fibre edges of one blanket interlock with the soft fibre edges of the blankets applied next to it, forming a continuous blanket of insulation, thus eliminating inefficient cracks and joints that are found in the application of molded types of insulating materials.

Since the blanket is flexible, it does not break in handling and can be applied to equipment having curved or irregular surfaces. Effective up to 1200° F., the B-H Blanket is unexcelled in its insulating efficiency and low cost of application. If the equipment to be insulated does not have a casing of any kind and a cement finish is desired, the use of style 2-A, which has expanded metal lath on one side, makes possible a good surface for the insulating cement to key to. This eliminates the necessity of applying a metal fabric before the application of the finishing cement, as it is necessary to do in covering the molded type of insulating blocks with cement.

B-H Mastic Rockwool blankets, 4-in.thick, on flue leading air ducts and finished with ½-in. coat of cement.

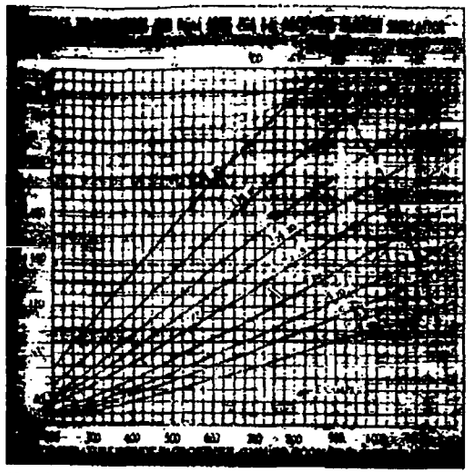


U BLANKET INSULATION

Heat Loss Chart—To determine the surface temperature of a given thickness of Blanket, read the chart as follows: Under table of recommended thicknesses, a 3-in. Blanket is suggested for equipment having a hot surface temperature of 800° F. Therefore follow vertically from the 800° F. point until that line intercepts the 3-in. curve. At that point, follow in a horizontal line to the left until it intercepts the margin, and it will be seen that at that point the figure is 138, which is the temperature in degrees Fahrenheit of the cold surface on the outside of the blanket.

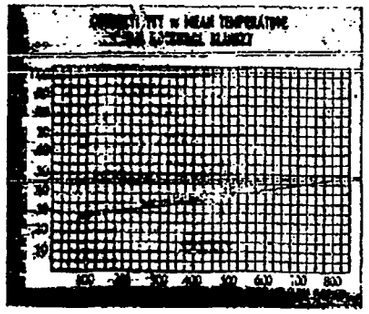
Similarly, to determine the heat loss for a given condition, refer again to the example on the chart:

Follow vertically from the 800° F. mark, to an intersection with the 3-in. curve. From that point, follow horizontally to the right until intercepting the heat loss curve. At this point, go vertically to the upper margin which is calibrated in terms of b.t.u. heat loss, and it will be seen that the heat loss for this particular condition is 95 b.t.u. per sq. ft. per hour.



Standard Styles of B-H Blankets

Style	*Description*
1	1 in. Wire Mesh both sides
2	1 in. Wire Mesh and Stucco Lath
2-A	1 in. Wire Mesh and Expanded Metal Lath
3	Stucco Lath both sides
3-A	Expanded Metal Lath both sides
3-B	Stucco Lath one side, Expanded Metal Lath other side
4	Stucco Lath and ⅜ in. Rib Lath (rib turned in)
4-A	Stucco Lath and ⅜ in. Rib Lath (rib turned out)
5	Stucco Lath and ¾ in. Rib Lath (rib turned in)
5-A	Stucco Lath and ¾ in. Rib Lath (rib turned out)
6	½ in. Rib Lath both sides (rib turned in)



Recommended Blanket Thicknesses

Hot Surface Temperatures

100° F.–200° F. 1 in
200° F.–300° F. 1½ in
300° F.–500° F. 2 in.
500° F.–700° F. 2½ in
700° F.–900° F. 3 in.
900° F.–1100° F. 3½ in.
1100° F.–1200° F. 4 in.

Uses for B-H Blankets

Cylindrical Boilers and Tanks
Boiler Casing Walls
Fan Housings and Preheaters
Milk, Asphalt and Other Type Tank Trucks
Boiler Breechings and Ducts
Vulcanizers
Railway Tank Cars and Locomotives
Oil Refinery Towers and Tanks
Precipitators
Spray Dryers
Turbines
Ovens

Standard Sizes—B-H Blankets are manufactured in standard sizes of 2 by 4 ft. and 2 by 8 ft., in thicknesses of 1 to 8 in. Special sizes can be made upon request at a small additional cost.

LIST PRICES PER SQUARE FOOT
(Subject to Discount)

Thickness (Inches)	Style 1	Style 2 2-A	Style 3 3-A-B	Style 4 4-A	Style 5 5-A	Style 6
1	$0.40	$0.45	$0.55	$0.60	$0.70	$3.75
1½	.45	.55	.60	.65	.75	.85
1½	.50	.60	.65	.70	.80	.90
1¾	.55	.65	.70	.75	.85	.95
2	.60	.70	.75	.80	.90	1.00
2½	.70	.80	.85	.90	1.00	1.10
3	.80	.90	.95	1.00	1.10	1.20
3½	.88	.98	1.03	1.08	1.18	1.28
4	.95	1.05	1.10	1.15	1.25	1.35
4½	1.01	1.11	1.15	1.21	1.31	1.45
5	1.10	1.20	1.25	1.30	1.45	1.55
5½	1.18	1.28	1.33	1.38	1.55	1.65
6	1.25	1.35	1.40	1.45	1.65	1.75
6½	1.35	1.45	1.50	1.55	1.75	1.85
7	1.40	1.50	1.55	1.60	1.85	1.95
7½	1.45	1.55	1.63	1.68	1.95	2.05
8	1.55	1.65	1.70	1.75	2.05	2.15

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Submit Any Unusual Insulation Problem for Method of Application—B-H Blankets can be applied easily to horizontal or vertical tanks, towers, ducts, breechings and other types of equipment, either indoor or exposed to weather. We will be pleased to recommend a suitable method of application if you will give us details of the equipment to be covered.

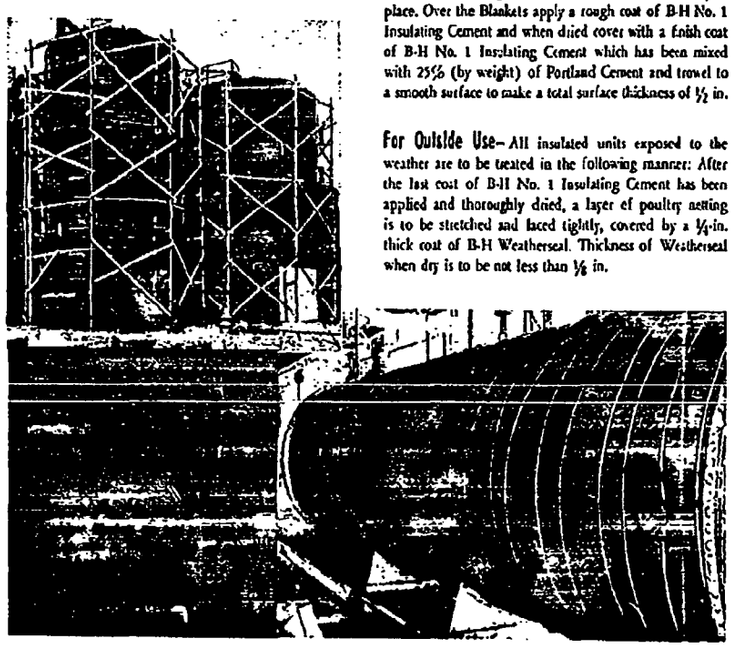
SPECIFICATIONS

B-H Blanket Insulation for Vessels Tanks, Towers, Ducts, etc.

Insulating Materials—All vessels, tanks, towers, ducts, etc., as noted on drawings are to be insulated with Baldwin-Hill Style 2-A Blanket of thickness as specified below, securely banded and covered with B-H No. 1 Insulating Cement and Weatherseal in accordance with the following specifications.

Insulation Thickness

See Recommended Thicknesses on page 8.



Preparation—All vertical tanks and towers are to have angle iron supports (with ¼-in. holes drilled 8 in. O.C.) welded to vessel at 8-ft. intervals starting 8 ft. above the bottom. The Blankets are to be hung from these supports.

Application—B-H Style 2-A Blankets are to be hung from circular angle supports wired on 8-in. centers with No. 12 ga. galvanized binding wire. Blankets shall be hung with the 1-in. wire mesh against the side of the vessel. Lace together all abutting edges of blankets with No. 16-ga. galvanized soft annealed lacing wire.

Apply galvanized steel bands and seals as follows:

Diameter of Vessel	*Size of Bands*	Spacing *Vertical on Parallel*	Spacing *Radial at O.D. of Heads*
6 ft.–0 in. and below	½ in. x .020	8 in.	18 in.
6 ft.–0 in. to 10 ft.–0 in.	½ in. x .020	6 in.	18 in.
10 ft.–0 in. to 15 ft.–0 in.	¾ in. x .023	6 in.	18 in.
15 ft.–0 in. to 20 ft.–0 in.	¾ in. x .023	5 in.	18 in.

Bands shall be tightened to hold the Blankets securely in place. Over the Blankets apply a rough coat of B-H No. 1 Insulating Cement and when dried cover with a finish coat of B-H No. 1 Insulating Cement which has been mixed with 25% (by weight) of Portland Cement and trowel to a smooth surface to make a total surface thickness of ½ in.

For Outside Use—All insulated units exposed to the weather are to be treated in the following manner: After the last coat of B-H No. 1 Insulating Cement has been applied and thoroughly dried, a layer of poultry netting is to be stretched and laced tightly, covered by a ¼-in. thick coat of B-H Weatherseal. Thickness of Weatherseal when dry is to be not less than ⅛ in.

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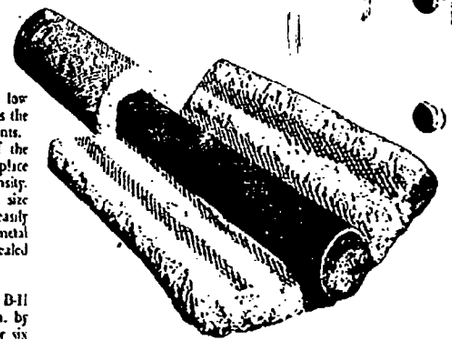
No. 100 Pipe Covering

Effective Up to 1200° F.—For Long Runs Overhead or Underground and Diesel Exhausts



THE high temperature, moisture-resistant, long fibre B-H *Hecla* Rockwool of which No. 100 Pipe Covering is made is highly suitable for use in the presence of heat and moisture, since it has a low alkalinity factor. Because of this characteristic, it meets the most exacting Government and engineering requirements.

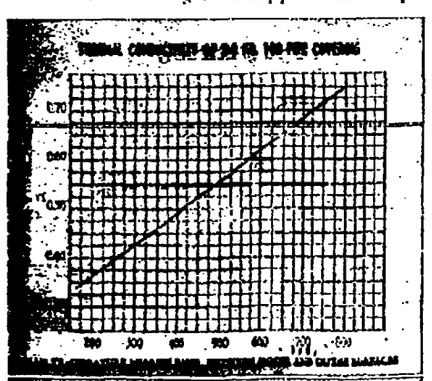
Expanded metal lath on the outside and strips of the same material on the inside hold the felted fibres in place so that the covering retains its fabricated size and density. Packed in flat sheets and cut to fit exactly the pipe size for which it was made, No. 100 Pipe Covering is easily wrapped around the pipe. The edges of the expanded metal lath are brought together by lacing 16-ga. soft annealed wire through the mesh of the lath.

Water Absorption—To test the water repellency of B-H No. 100 Pipe Covering, a sample measuring 4¼ in. by 4¼ in. by 2 in. was immersed in water at 80° F. for six hours. Water retained immediately after immersion, 7.9 per cent by weight, 1.43 per cent by volume; no water was retained after draining 20 hours.

Alkalinity—Since any decomposition of the fibres in rockwool pipe covering would result in loss of efficiency and structural failure, the permanency of those fibres is of prime importance. This is possible only if the rockwool is chemically stable. A standard test has been established indicating this stability in terms of Sodium oxide (Na_2O) content which is not to exceed 0.25 per cent.

To determine the stability of B-H No. 100 Pipe Covering, samples were submitted to The Pittsburgh Testing Laboratories whose report shows an alkalinity factor of only 0.18 per cent. This figure is well below the standard requirements.

Standard Sizes—B-H No. 100 Pipe Covering is manufactured in 2-ft. long sections for pipe sizes from 2 in. up to and including 30 in. pipe. Thicknesses range from 1 in., 1½ in., 2 in., 2½ in., 3 in., and 4 in.



LIST PRICES
(Subject to Discount)

Pipe Size in.	Prices Per Lineal Foot at Thickness of 1 in.	1½ in.	2 in.	2½ in.	3 in.	4 in.
2	$0.70	$0.90	$1.30	$1.65	$2.20	$3.10
2½	.75	1.00	1.40	1.75	2.38	3.25
3	.85	1.10	1.50	1.85	2.45	3.40
3½	.95	1.20	1.60	1.95	2.60	3.55
4	1.05	1.30	1.70	2.05	2.75	3.70
4½	1.15	1.40	1.85	2.20	2.90	3.85
5	1.25	1.50	2.00	2.35	3.05	4.00
6	1.35	1.65	2.15	2.50	3.30	4.20
7	1.50	1.80	2.30	2.70	3.55	4.50
8	1.65	1.95	2.50	2.95	3.80	4.80
9	1.80	2.15	2.75	3.20	4.10	5.10
10	2.00	2.35	3.00	3.50	4.40	5.50
12	2.20	2.70	3.30	3.80	4.80	6.00
14 O. D.	2.50	3.00	3.60	4.20	5.30	6.50
16	2.80	3.30	4.00	4.60	5.80	7.10
18	3.10	3.60	4.40	5.00	6.30	7.60
20	3.40	3.90	4.80	5.35	6.90	8.20
24	4.00	4.60	5.60	6.40	7.50	9.30
30	5.00	5.60	6.80	7.80	9.40	11.20

Recommended Thicknesses
Hot Surface Temperatures

212° F. to 350° F.	1 in.	700° F. to 850° F.	2½ in.
350° F. to 500° F.	1½ in.	850° F. to 1000° F.	3 in.
500° F. to 700° F.	2 in.	1000° F. to 1200° F.	4 in.

SPECIFICATIONS
B-H No. 100 Pipe Covering and Accessories for Hot Pipe Lines

General—Hot pipe lines 2-in. standard pipe size and larger shall be insulated with B-H No. 100 Pipe Covering in accordance with the following thickness schedule (see Recommended Thicknesses on page 10) and specification:

Insulation for pipe lines over 96 in. in circumference shall be made up of two pieces of unequal length, one piece 96 in. long and one piece as required. When pipe temperatures are in excess of 600° a layer of 12-lb. asbestos paper shall be applied to the surface of the B-H No. 100 Pipe Covering.

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Insulation—Apply B-H No. 100 Pipe Covering with the *strips* of expanded metal lath against the metal surface of the pipe. Lace the outer (expanded metal lath) covering at horizontal and circumferential joints with 16-ga. galvanized annealed lacing wire. Insulation on 10-in. pipe size and larger is to be held in place for lacing by No. 16 ga. galvanized wire wrapped spirally on 1-ft. centers.

At flanged fittings, stop the insulation far enough away from the flange for removal of bolts.

Covering and Bands—Apply a covering to the insulation composed of 55-lb. waterproof roofing paper lapping 3 in. circumferentially over the preceding covering and also on the horizontal joint. The horizontal laps are to be made on the side of the pipe so that they will shed water. All the laps are to be sealed with lap cement the full 3 in. width. Apply ½ in. by 0.015-in. galvanized steel bands and seal with ½-in. No. 41 Sealstrap Seals. One band is to be placed at the exposed end of each 3-ft. length of covering while the lap cement is still wet.

NOTE:—For inside lines where canvas is available the insulation may be covered with 8-oz. canvas after application of 40-lb. rosin sized paper.

Fittings and Valves—The insulation for fittings and valves for pipe size up to and including 3½ in. is to be B-H No. 1 Insulating Cement applied directly to the valves in layers of approximately 1½ in., each layer being reinforced with 1-in. mesh by 20-ga. galvanized poultry netting, to the same thickness as the adjacent pipe insulation. Over the last layer of cement when dried apply poultry netting and a ⅛-in. coat (⅛-in. when dry) of B-H Weatherseal. For inside work the last layer of poultry netting and Weatherseal is to be omitted.

Insulation for fittings and valves for pipe size 4 in. and larger is to be B-H Mono-Block. The thickness of Block insulation is to be ½ in. less than the adjoining pipe insulation. Stretch a layer of 1-in. by 20-ga. galvanized poultry netting over the Block and tie with 16-ga. lacing wire. Over this Block and netting, apply ½ in. of B-H No. 1 Insulating Cement, making the total thickness the same as adjacent pipe insulation. Apply ¼-in. coat (⅛-in. when dry) of B-H. Weatherseal over another layer of poultry netting. (Omit the last operation of poultry netting and Weatherseal for inside work.)

Underground Insulation—Underground pipe lines are to be insulated as above for outdoor work, and in addition, the entire line, after insulation is completely installed, is to be mopped with a liberal coating of asphalt.

230787

Low Pressure Coverings

Effective from 0° to 300° F.

B-H Air Cell is recommended for use on hot water or low pressure steam pipes where temperatures do not exceed 300° F.

It is a cellular type of pipe insulation made of continuous plies of corrugated asbestos paper. Invisible bottom seam is assured by hinged-type construction. Efficiency is greatly increased by special method of corrugating which assures maximum strength and produces approximately 70 per cent more dead air spaces. B-H Air Cell is finished with a heavy backer to which has been laminated a sheet of white glazed paper which repels water and dirt and becomes an integral part of the covering.

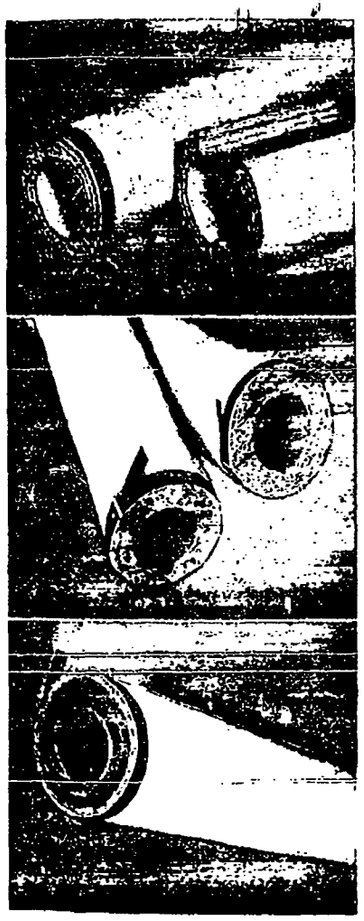
B-H Air Cell is available in 3-ply (¾-in.) and 4-ply (1-in.) thicknesses in all standard pipe and copper tubing sizes. It is packed in cartons and supplied with three one-inch wide black japanned bands per 36-in. section for application.

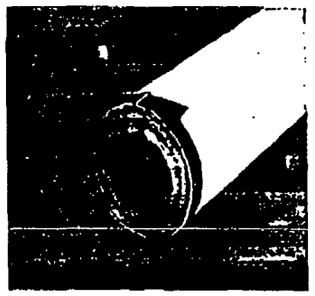
B-H Wool Felt—Suitable for service on either hot or cold water lines, B-H Wool Felt is built up of layers of wool felt paper to desired thicknesses for all standard pipe and tubing sizes. The covering is light in weight and can easily and rapidly be applied.

B-H Wool Felt is available in standard thicknesses of ½-in., ¾-in., and 1-in., and is finished with a cotton jacket over smooth asbestos felt backer. Packed in cartons. Bands, ¾-in. wide, are furnished for each 36-in. section.

B-H Frost-Proof Pipe Covering is recommended for use on pipes to prevent freezing when subject to temperatures lower than 32° F., but not for use where extremely low temperatures prevail, nor where water lies in pipes exposed to temperatures below freezing.

B-H Frost-Proof is made up of layers of hair felt and wool felt paper to approximately 1¼-in. thickness. It has a tar felt liner and a standard weight jacket. Bands, ¾-in. wide, are furnished for each 36-in. section. All seams and abutting ends should be sealed with an asphaltum base plastic to prevent air seepage for maximum efficiency.





B-H Anti-Sweat Pipe Covering was developed as a protection against condensation on cold water lines. It is made up of laminations of waterproof and wool felt paper, built up to the desired thickness. It is started with a layer of waterproofing felt, then several layers of wool felt with a backer of 2-ply waterproof felt. This is repeated with the outer half shell starting with the waterproof layer and several layers of wool felt, then two layers of waterproofing felt with an outer layer of wool felt and a heavy asbestos paper felt under the canvas jacket.

Thicknesses of ½-in. and ¾-in. are made of thin solid layer construction. Bands ¾-in. wide are supplied per 36-in. section.

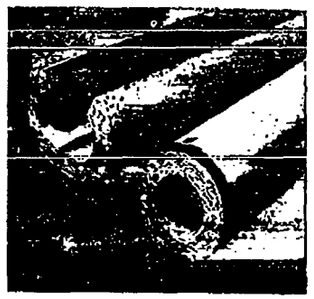
RATIO OF HEAT TRANSMISSION IN TERMS OF B.T.U.
B-H ANTI-SWEAT COVERING

Thickness Inches	*Pipe Size—Inches*									
	½	¾	1	1¼	1½	2	2½	3	3½	4
½	.212	.245	.286	.338	.374	.443	.518	.611	.685	.757
¾	.185	.212	.243	.284	.312	.367	.425	.497	.553	.611
1	.167	.189	.215	.249	.272	.318	.364	.423	.468	.515
1½	.143	.160	.180	.206	.223	.257	.292	.337	.369	.404
2	.128	.142	.158	.180	.194	.221	.249	.284	.311	.338

SUPERIOR PIPE COVERING

Effective Up to 600° F.

B-H Superior Pipe Covering is an asbestos felt covering designed for service at temperatures up to 600°. Air spaces are located so that the best results are obtained from the dead air spaces contained in the material. B-H Superior is easy to apply, and is an extremely efficient product constructed to withstand rough handling and vibration of pipes without breakage. It has excellent reclamation value should repairs or relocation of equipment be necessary.



B-H Superior Pipe Covering has 22 laminations to the inch, including a liner and backer of flat asbestos felt. It is furnished with a cloth jacket in 3-ft. sections, and 1-in. wide bands are supplied for each section.

B-H SUPERIOR PIPE COVERING

MEAN TEMPERATURE (Degree F.)	135°	250°	286°
K FACTOR (B.t.u. per hour, per foot of pipe, per inch thickness, per degree F.)	0.422	0.434	0.487

BULK DENSITY OF B-H SUPERIOR, DRY
15.7 lb. per cu. ft.

260788

260789

B-H No. 1 Insulating Cement

A Plastic Insulation Effective Up to 1800° F.

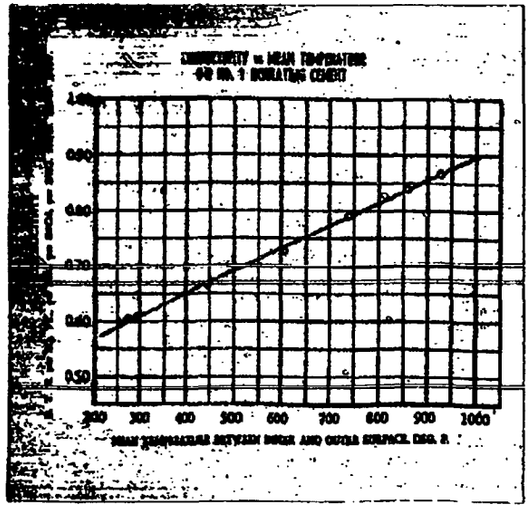
BALDWIN-HILL No. 1 Insulating Cement is a plastic insulation produced from high temperature resisting, nodulated B-H *Hack* Rockwool combined with high-grade long-fibre asbestos and a colloidal clay. It is effective up to 1800° F. and reclaimable where temperatures have not exceeded 1200° F.

B-H No. 1 Cement fills a real need for an easily applied, plastic insulation suitable for insulating large or small irregular surfaces not suited to molded types of insulation. Because of its workability feature, its ease of application and the fact that it can be stacked without breakage or loss, B-H No. 1 Cement is ideally suited for maintenance work.



Outstanding Features of No. 1 Cement

High Insulation Efficiency: When mixed with water to a trowelable consistency, the nodules of B-H *Hack* Rockwool do not become saturated and form a homogeneous mass with the fibre and clay. Instead, they retain their physical properties and when the mass is dried out, on a hot surface, the dead air cells confined in these nodules of rockwool provide maximum insulating efficiency and lightness in weight.



Rust Resistance: Since water is used to mix ordinary insulating cements, rusting of iron or steel surfaces can occur if there isn't heat on the equipment and the cement has to air dry. The rusting can not only harm the metal surface, but will break the bond between it and the cement.

B-H No. 1 Cement contains a *rust inhibitor*, which resists this corrosive action, whether the cement dries out immediately on a hot surface or air dries over a long period of time.

Easy to Apply: No. 1 Cement is highly adhesive, which makes it easy and economical to apply, as it readily adheres to brick or metal surfaces, and does not "roll up" behind the trowel or "slide off" the surface. To avoid any misunderstanding in mixing or applying B-H No. 1 Cement, an instruction sheet is placed in each bag. Add approximately 12 gallons of water to a 50-lb. bag and mix to a trowelable consistency. The cement then forms a plastic mass that is ready for application.

The first coat should be applied by spotting on patches of cement approximately ¾ in. thick. After this coat has dried, the next coat can be roughed on or troweled out to a smooth finish, depending upon the thickness of cement to be applied.

Exceptional Coverage: As the unit or square foot area covered determines the material cost of an insulating cement, B-H No. 1 is a remarkably economical material. In actual use, it has a proven wet coverage of between 55 sq. ft. and 60 sq. ft., 1-in. thick, per 100 lb., and because of its low volumetric shrinkage, its dry coverage is approximately 50 sq. ft.

Ideal Maintenance Insulation: Packed in convenient sized multiwall paper bags containing 50 lb. of material, B-H No. 1 Cement can be conveniently stocked without breakage or loss. It is then available, at all times, for covering a valve or fitting that has had to be replaced, or to cover some other piece of equipment. Because of the ease of application, a neat and workmanlike job can be made without trouble.

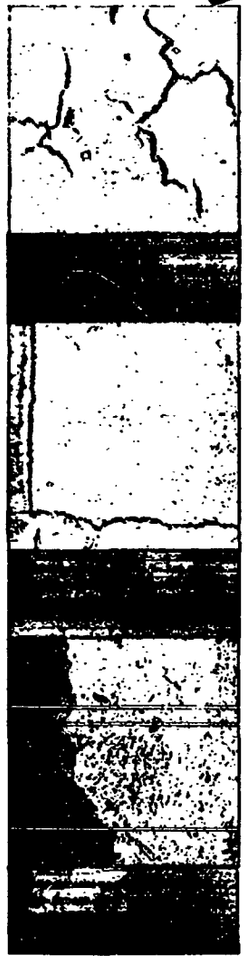
Recommended Thicknesses—To obtain the most economical results it is recommended that application should be made in the following thicknesses:

Hot Surface Temperatures			
100–175° F.	1 in.	550–750° F.	2½ in.
175–325° F.	1½ in.	750–950° F.	3 in.
325–550° F.	2 in.	950–1200° F.	4 in.



Packed in 50-lb. multiwall paper bags, No. 1 Cement is easily stored—ready for instant use. There is no loss or breakage as with molded types of insulation.

With B-H No. 1 Cement You Avoid These Typical Failures of Ordinary Cements



260790

260791

NO. 1 INSULATING CEMENT



Preparation of Equipment—All surfaces of equipment to be insulated should be thoroughly cleaned. Remove all dirt, oil, loose scale, rust or paint. In the event it is not possible to remove old paint or other foreign material, a layer of 1½-in. No. 20-ga. galvanized hexagonal wire mesh netting shall be applied to the bare surface of the vessel to establish the proper bond.

Application of B-H No. 1 Insulating Cement—B-H No. 1 plastic insulation shall be applied to the vessel by spotting on the first coat to a thickness of approximately ¾ in. When the first coat is thoroughly dried, the second coat shall be troweled directly over the first coat to a thickness of approximately ¾ in. The surface of each layer of insulation shall be left rough to provide a good adhesion surface for the next layer.



Heat Loss Chart—To determine the surface temperature of a given thickness of cement, read the chart below as follows: Under table of recommended thicknesses, a 3 in. application of cement is suggested for equipment having a hot surface temperature of 800° F. Therefore follow vertically from the 800° F. point until that line intercepts the 3 in. curve. At that point, follow in a horizontal line to the left until it intercepts the margin, and it will be seen that at that point the figure is 158, which is the temperature in degrees Fahrenheit of the cool surface on the outside of the cement.

Similarly, to determine the heat loss for a given condition, refer again to the example on the chart: Follow vertically from the 800° F. mark to an intersection with the 3-in. curve. From that point follow horizontally to the right until intercepting the heat loss curve. At this point, go vertically to the upper margin which is calibrated in terms of b.t.u. heat loss, and it will be seen that the heat loss for this particular condition is 150 b.t.u. per sq. ft. per hour.

After the second coat has been applied, a layer of 20-ga. 1½-in. galvanized hexagonal wire mesh netting shall then be tightly stretched over the dry cement, and the edges securely fastened with 16-ga. soft annealed galvanized wire. Additional coats of B-H No. 1 Cement shall be applied in similar manner and reinforced with galvanized wire between every 1½-in. thickness until the required insulation is obtained.

Out-Door Finish—Vessels insulated with B-H No. 1 Cement which are exposed to weather conditions or when in buildings where excessive humidity exists, shall be weatherproofed with B-H Weatherseal in the following manner:

After the last coat of B-H No. 1 Insulating Cement has been applied and thoroughly dried, a layer of 20-ga. 1½-in. galvanized hexagonal wire mesh netting is to be stretched and laced tightly, covered by a ¼-in. thick coat of B-H Weatherseal. Thickness of Weatherseal when dried is to be not less than ⅛ in.

SPECIFICATIONS

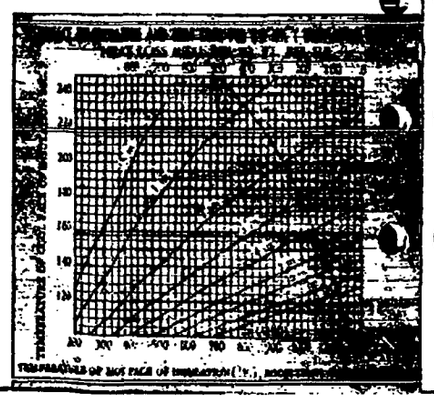
For Monolithic Insulation of Vessels with B-H No. 1 Insulating Cement

All vessels, tanks, towers, ducts, etc., to be insulated with B-H No. 1 Insulating Cement, of thicknesses as specified below, securely held with wire netting, and weatherproofed with B-H Weatherseal.

Insulation Thicknesses

See Recommended Thicknesses on page 13.

260792





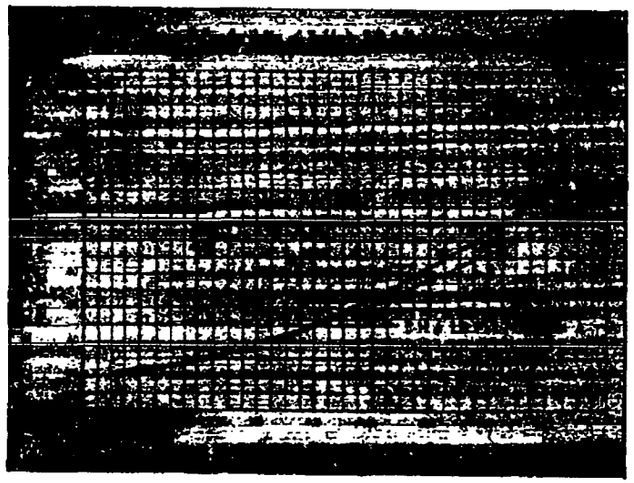
B-H Mack Backwood Felts are semi-flexible, yet rigid enough to support themselves.

B-H FELT

Effective from Sub-Zero Temperatures Up to 600° F.

EFFECTIVE over the full range of temperatures from sub-zero up to 600° F., B-H Felt is a highly resilient and light-weight insulation fabricated of high temperature resisting, moisture repellent *Mack* rockwool. Its fibres are felted and bonded together, and uniformly distributed to provide extremely low thermal conductivity. Chemically stable—its low alkalinity factor meeting U. S. Government specifications—B-H Felt insulations cannot disintegrate under the most severe service conditions. Its resiliency prevents settling and loss of efficiency.

Thermal Conductivity—Conductivity tests, by the Pittsburgh Testing Laboratory, Pittsburgh, Pa., were made in a guarded hot-plate apparatus. Thermal equilibrium was established at each of four mean temperatures and the results shown on the graph chart below were obtained:



260793

FELT INSULATION

Density—B-H Felt insulation is available in 6-lb. and 8-lb. density.

B-H 6-lb. Felt—Because it is easily handled and possesses good physical strength, this density is the most commonly used.

B-H 8-lb. Felt—The greater density of 8-lb. Felt forms a semi-rigid felt that is used primarily where some supporting strength on the part of the felt is required

Typical Uses

Electric and Gas Ovens	Insulated Truck Bodies
Dryer and Oven Panels	Cold Water Lines
Boiler Casings	Hull Insulation
Air Conditioning Systems	Ship Refrigeration
Refrigerators	Decks and Bulkheads
Locker Plants	Ammunition Chambers

Standard Sizes

Thickness: 1, 1½, 2, 2½, 3, 3½, 4 in.
Widths: 12, 24, 48 in.
Lengths: 24, 30, 48 in.

SPECIFICATIONS

B-H Felt Insulation for Outdoor Cold Pipe Lines

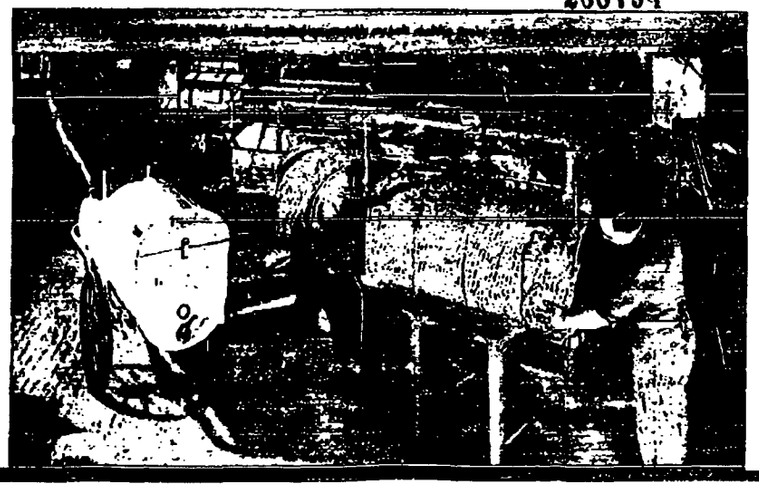
Piping—Coat bare pipe with hot asphalt (180° to 200° F. melting point). Before asphalt has a chance to cool, apply a coat of 15-lb. saturated rag felt with 3-in. lap on edges and ends, and mop again. Apply 1½-in. thick layer of B-H 6-lb. Felt securely tied with jute twine spaced on 1-in. centers.

Apply a layer of 15-lb. rag felt which has been mopped with hot asphalt, over the first layer of felt, lapped 3-in. as above and again mop with asphalt after application. Apply one or two more layers of 1½-in. B-H 6-lb. Felt, jute twine, 15-lb. rag felt and asphalt as specified above. Over the last layer of B-H 6-lb. Felt, rag felt, etc., cover with two more layers of 15-lb. rag felt, mopping before and after application. Over the final layer of 15-lb. rag felt, apply cover of 55-lb. roofing felt with joints lapped 3 in. and sealed with roofing cement. Before roofing cement dries, apply ½-in. steel bands, 6 in. on centers with one band over each end lap. Where lines are interrupted by valves or fittings, and at 20-ft. intervals of straight piping, seal up insulation by stopping succeeding layers of 15-lb. rag felt short of the next preceding layer, carefully sealing the ends with hot asphalt.

Valves and Fittings—Apply coat of hot asphalt to the bare metal surface of fittings and flanges, immediately adding one thickness of 8-oz. burlap and again mop with hot asphalt to form a perfect seal.

Apply a layer of 1½-in. thick B-H 6-lb. Felt, wrapped with jute twine 1 in. on center, followed by another covering of burlap, mopping before and after application. Build up the insulation with layers of B-H 6-lb. Felt, burlap, etc., to the same thickness as adjacent piping insulation and add an extra mop coat of hot asphalt. Over this insulation apply ¼-in. coat of B-H No. 1 Insulating Cement with 25% (by weight) of Portland Cement. Seal with ¼-in. coat (⅛-in. when dry) of B-H Weatherseal lapping over edges of adjacent piping insulation.

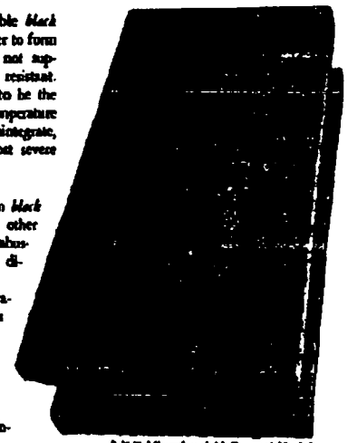
230794



B-H KOLDBOARD

Low Temperature Insulation, Effective from —150° to 300° F.

MADE from 100 per cent chemically stable *black* Rockwool fibres felted and bonded together to form flat, rigid blocks, B-H Koldboard will not support combustion and is exceptionally moisture resistant. Thus the infiltration of the moisture, conceded to be the greatest contributory cause of failure of low temperature insulations, is eliminated. Koldboard will not disintegrate, decay or break down structurally under the most severe service conditions.



B-H Koldboard, a rigid, fireproof block for use where low temperature insulation is required.

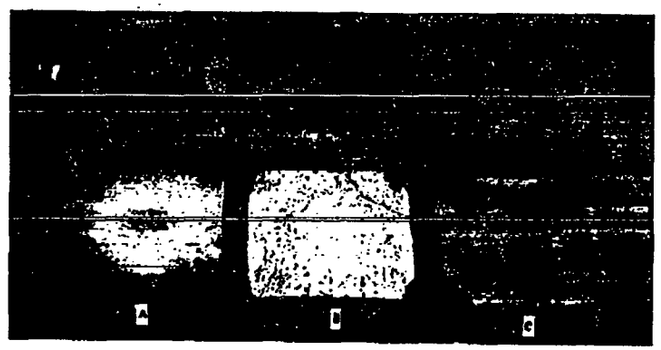
Non-Combustible—Since it is made entirely from *black* rockwool fibres and contains no paper pulp or other vegetable matter, Koldboard will not support combustion nor will it smolder when a flame is applied directly against its surface.

Tests made by The Pittsburgh Testing Laboratories in accordance with Federal Specifications showed that after 20 minutes of exposure to temperatures reaching 1470° F., Koldboard retained 99.6% of its original mass.

This outstanding characteristic of Koldboard, most important in the low temperature field, is unsurpassed by other commercially available insulations.

Moisture Absorption—Laboratory reports show a moisture absorption of only 0.68 per cent at a relative humidity of 65 per cent at a temperature of 75° F. Well below the 1 per cent maximum specified in Federal Specifications, these reports attest to the high moisture

Unsurpassed fire resistance of B-H Koldboard is clearly shown by this photograph taken after tests on several low temperature insulations by the Pittsburgh Testing Laboratories. Unexposed specimen in rear, exposed in front with Koldboard on the extreme left.



230795

KOLDBOARD

resistant characteristics of this material.

Thermal Conductivity—Tests performed by The Pittsburgh Testing Laboratory show that Koldboard has a thermal conductivity of 0.281 b.t.u. per sq. ft. per hr. per degree F. at a mean temperature of 50° F.

Flexural Strength—Koldboard has a flexural strength of at least 50 lb. per sq. in., which is well in excess of the 20-lb. requirement in Federal Specifications.

Density—The density of Koldboard is approximately 16 lb. per cu. ft.

Temperature Limits—Recommended for use to —150° F., Koldboard is so constructed that it can meet the requirements of service below that figure if special precautions are used in its application.

Uses

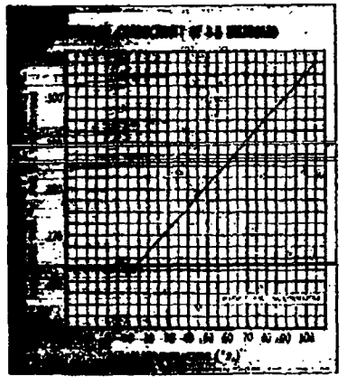
External Surface of Air Conditioning Ducts
Cold Storage Rooms Locker Plants Refrigerators
Marine Bulk Heads Roof Insulation Ship Hulls

Recommended Thicknesses

Temperature	Thickness	Temperature	Thickness
—45° F. to —15° F.	10	15° F. to 25° F.	6
—15° F. to 0° F.	8	25° F. to 35° F.	5
0° F. to 15° F.	7	35° F. to 60° F.	4

Standard Sizes—Koldboard is made in blocks 18 in. and 36 in. long; 6 in., 12 in., 18 in., and 24 in. wide; ½ in., 1 in., 1½ in., 2 in., 2½ in., 3 in., 3½ in., and 4 in.

Packages—Koldboard is packaged in high test fibre board cartons.







260796

FILL MATERIAL

Effective Up to 1200° F.

BALDWIN-HILL *Mack* rockwool, high in efficiency, light in weight makes an economical, easy to handle fill insulation. This fine fibred, highly resilient rockwool does not settle and, because of its resistance to high temperatures and its low lime content, it will not disintegrate and fail under service conditions.

B-H *Mack* Rockwool is free from coarse, harsh particles which add to the weight of some wools and decrease their insulating value.

Because of its light weight, B-H *Mack* Rockwool does not increase appreciably the weight of insulated equipment. Covering 15 per cent to 20 per cent greater area than most similar products, it is an exceedingly economical fill insulation.

Applications—Baldwin-Hill Insulating Wool is used as an effective fill insulation on many types of equipment, including:

Furnace and Boiler Walls
Hot Water Tanks
Oil Burner Bases
Expansion Joints
Cold Storage Rooms
Incinerator Walls
Glass Annealing Equipment
Oven Walls
Ships
Gas and Electric Ranges

Obtainable in Two Forms—B-H Insulating Wool is packaged in two forms, *Loose* and *Granulated*. Their insulating qualities and fibre characteristics are the same in either form, differing only in their physical shape.

LOOSE WOOL is in long fibre form just as it comes from the furnace or cupola. In this bulk form it is ideal for filling large areas such as oven or furnace walls.

GRANULATED WOOL is the loose wool reduced to nodules. This is used for filling more confined spaces where it is not as easy to pack the bulk loose wool.

Package—Multiwall paper bags each containing 40 lb. Average density in normal installation, 7 to 9 lb. per cu. ft.



260797

FILL INSULATION

WEATHERSEAL

A Weatherproof Protection for Insulated Surfaces



100-lb. Drum

BALDWIN-HILL Weatherseal is a fire resistant emulsified asphalt compound furnished ready mixed in plastic form. This completely waterproof material can be applied readily by trowel to the surface of insulating cement or other insulating material to give it permanent protection even under the most severe weather conditions.

B-H Weatherseal dries and retains its black color and takes paint when thoroughly dry. All fibres are completely coated so that there is no wick action. Weatherseal does not crack under changes in temperature, it does not penetrate, but stays on the surface of the insulation, and it will not run or sag on vertical surfaces.

Coverage—One hundred lb. of B-H Weatherseal will cover 55 sq. ft. of surface ¼ in. thick. Drying reduces the thickness of the Weatherseal to ⅛ in. and gives a complete seal over the area to be protected.

Packages—B-H Weatherseal is packaged in metal containers of the following sizes: 50-lb. pails, 100-lb. drums, 300-lb. drums, and 500-lb. drums.

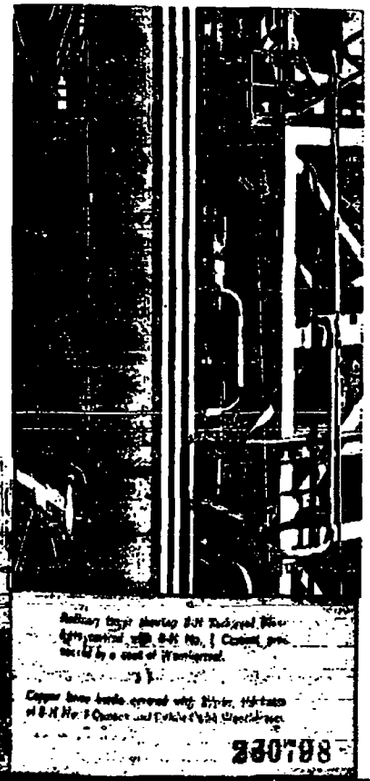
APPLICATION SPECIFICATIONS

All vessels, tanks, towers, ducts, etc., insulated and finished off with a coating of insulating cement shall be weatherproofed with B-H Weatherseal to thickness as specified below.

Preparation of Equipment—All surfaces of the equipment to be coated with Weatherseal shall have a course of 1½-in. wire mesh stretched over the entire surface and drawn down tightly over the existing insulation.

Application—Over the 1½-in. wire mesh which has been tightly drawn, B-H Weatherseal shall be troweled to a thickness of ¼ in., being sure that the Weatherseal is thoroughly troweled into the wire mesh.





330798

B-H BOND-TITE

A HIGHLY adhesive material that can be easily troweled or spotted to the surface of block insulation, Bond-Tite is particularly adaptable to temporarily securing block insulation prior to application of reinforcing wire. Simply apply Bond-Tite to the block and press into place on either metal or brick surfaces. Applied on metal surfaces, Bond-Tite has a coverage of approximately 100 sq. ft. per 50 lb. Detailed specifications for use with block insulation can be found on page 6 of this catalog.



Packages—Bond-Tite is packaged in metal containers of the approximate following sizes: 75-lb. pails, 175-lb. drums, 350-lb. drums, 600-lb. drums.

B-H DUCT SOUNDLINER

BALDWIN-HILL Duct Soundliner provides an effective means of minimizing sound transmitted through the ducts of an air conditioning system by installing it inside the duct. It is a rigid material felted of chemically stable Rockwool fibres. In addition to its sound-absorption qualities, it does not disintegrate nor support combustion.

The material is easily cut and fitted around beads in the duct. It can be attached with bolts or specially prepared acoustical cement. For information pertaining to application, write our Trenton, N. J., office.

Sound Absorption—The Riverbank Laboratories, Geneva, Illinois, reports as follows on sound absorption tests: "This product was in the form of semi-rigid tile, 22 in. by 33 in., showing an average weight of 1.38 lb. per sq. ft. The material was tested on 18-gauge sheet metal nailed to 1-in. furring, Mounting No. 8 of the Acoustical Materials Association. Tests were made on 72 sq. ft. panel according to our standard procedure."

The sound absorption coefficients shown were as follows:

TEST NO.	128	256	512	1024	2048	4000	NOISE
41-44	0.28	0.44	0.74	0.85	0.85	0.65	0.70

Standard Sizes and Packages

24 in. by 36 in.

½ in. thick.....120 sq. ft. to carton

1 in. thick..... 60 sq. ft. to carton

330798

B-H Diatomaceous Earth Products

B-H *Coarse Diatomaceous Earth* is a high grade insulation filler. Packed in 100-lb. bags, it is usually installed to a density of approximately 18 lb. per cu. ft. The light density of this product makes possible an economic insulation effective up to 1600° F. without shrinkage.

B-H Fine Diatomaceous Earth, effective up to 1600° F. without shrinkage, possesses characteristics similar to the coarse grade described above, except that its fineness permits filling a narrow space or hollow walls where the coarse grade would not be satisfactory.

B-H Calcined Aggregate is a diatomaceous silica which has been calcined and is in coarse granular form which is particularly suitable for insulating high temperature equipment. Effective up to 2100° F., it can be used to good advantage where lack of space prohibits the use of normal sized firebrick linings. It is furnished in 100-lb. bags and installed to a density of approximately 26 lb. per cu. ft.

No. 6 High Temperature Cement

A HIGH temperature insulating cement composed chiefly of amosite asbestos fibre, calcined diatomaceous earth and a clay binder. It is packed in 40-lb. bags.

It is used primarily as a mortar for pointing up joints in block insulation or for filling cracks and small openings.

No. 6 Cement can be mixed with water and applied with a trowel. It will cover approximately 45 sq. ft. 1-in. thick per 100 lb. of dry cement. The dry density is about 27 lb. per cu. ft. If not subjected to heat over 400°, the dried cement may be softened with water and re-applied.

No. 52 Asbestos Cement

BALDWIN-HILL No. 52 Asbestos Cement is a general utility short fibre cement which is used in large quantities by the steam fitting and plumbing trades. When applied it gives a smooth gray finish which can be painted or covered with canvas for protection.

Packed in 100-lb. bags, it has a coverage capacity, applied and dried, of 20 sq. ft., 1 in. thick per bag.

The temperature limit of this cement is 1000° F.

No. 102 Asbestos Finishing Cement

THIS cement is a high grade finishing cement suitable for hot surfaces, having a temperature limit of 1000° F.

It trowels smoothly and, when dried out, gives a firm, smooth finish which may be readily painted with lead in oil, or cold water paint. The finish is durable and will not crack, check, or peel off.

Packed in 100-lb. bags, this cement has a coverage capacity, applied and dried, of 25 sq. ft., 1 in. thick per bag.

260-00 PRINTED IN U.S.A. 2-10

TYPICAL APPLICATIONS OF Baldwin-Hill INSULATIONS

