

**PLAINTIFF'S
EXHIBIT**

K-1006

**MINUTES
of the
SPRING MEETING
NATIONAL INSULATION MANUFACTURERS ASSOCIATION
New York, N. Y. April 6, 1965**

The meeting was called to order at 9:15 A. M. by President P. D. Kaley with the following in attendance:

Baldwin-Ehret-Hill, Inc. Trenton, N. J.	M. M. Wilson E. E. Drake
The Eagle-Picher Company Cincinnati, Ohio	L. T. Montant, Jr.
Fibreboard Paper Products Corp. San Francisco, Calif.	D. M. Nelson J. W. Cordrey
Forty-Eight Insulations, Inc. Aurora, Ill.	T. S. Clousing
Gustin-Bacon Mfg. Company Kansas City 5, Mo.	F. W. Muller
Johns-Manville Sales Corp. New York, N. Y.	M. W. Burleson C. E. Ernst A. L. Wallner
Owens-Corning Fiberglas Corp. Toledo, Ohio	J. F. Vyverbert
Pittsburgh Corning Corp. Pittsburgh, Pa.	R. E. Buckley R. E. Fuhs
Pittsburgh Plate Glass Company Pittsburgh, Pa.	P. D. Kaley R. L. Loeffler H. O. Mulkey
The Ruberoid Company New York, N. Y.	R. W. Henry
Cadwalader, Wickersham & Taft	G. D. Reycraft

National Insulation Mfrs. Assn. J. M. Barnhart

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The death of N. L. Morell was announced with regret.

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APPROVAL OF MINUTES

A motion was made, seconded and passed

That the Minutes of the Meeting of October 5,
1964, as bulletined by the Association be approved,

TRAFFIC COMMITTEE REPORT

Chairman A. J. Wallner reported on the activities of the Committee in accordance with the Minutes of their Meeting which is attached hereto and made part of these Minutes.

MARKETING RESEARCH COMMITTEE REPORT

Chairman R. L. Loeffler reported as follows:

A review has been made of minutes from Marketing Research Committee meetings, and summary reports submitted by the committee chairman in prior years. This review identified assignments in four general areas which can be classified as ECONOMIC OUTLOOK, GOVERNMENT STATISTICS, NIMA STATISTICS, and SPECIAL PROJECTS.

ECONOMIC OUTLOOK:

The Marketing Research Committee prepared a brief economic outlook for industrial insulations in certain prior years. To be useful, an economic statement should be based on extensive study of demand factors and lead-lag relationships. Without such background preparation, an economic presentation can be little more than a re-hash of the general statements already available to all of us through a wide variety of business publications. While the Committee will continue such a program if requested to do so, we recommend that this activity be discontinued.

GOVERNMENT STATISTICS:

The Marketing Research Committee is working with other insulation trade associations and the Bureau of Census toward improving government reporting of production and shipments statistics. Our aim is to have the Bureau of Census conduct an annual census of all thermal and acoustical insulations using a uniform market/product basis.

MARKETING RESEARCH COMMITTEE REPORT (cont'd.)

An outline of our suggested market/product breakdown was submitted to the Bureau of Census on December 21, 1964. A further definition of the equipment and industrial markets is to be submitted soon, and will be followed by another meeting this Spring with Mr. C. Wildes, Assistant to Chief, Industry Division, Bureau of Census. We are following this project closely in hopes that it will be ready in time to accommodate 1965 data.

NIMA STATISTICS:

The report form and product groupings used for reporting NIMA shipments remained basically unchanged from December 1958-1963. The only modification to the instructions, during this period, eliminated separate reporting of insulations by temperature service range in Product Group "A". A new form was introduced in January 1964 to accommodate reporting by state, and a revision in July consolidated 85% magnesia with calcium silicate and related insulations. A further revision in January 1965 eliminated the former cold use board and under 4-1/4 lb./cu. ft. felt categories. These latter two items are now reported along with the over 4-1/4 lb./cu. ft. felts in a new "Boards & Felts" category, which provides the distinction of "Plain" vs "Faced & Coated" products. These changes in product groupings were made to prevent disclosure of individual member shipments, and in response to a shift in the market. A summary table has been prepared to reflect these changes in NIMA shipments for 1958-1964, and is submitted as part of this committee report.

Some members found the conversion to state reporting more difficult than anticipated, and therefore consolidated reporting of NIMA shipments by state was not accomplished until the September report was released early in December. This leads to the Committee's recommendation that we reappraise the instructions concerning due date. We believe that the present 50 day plus lag could be cut to three weeks with the cooperation of each member. This would assure receipt of the consolidated report from Price Waterhouse with only a one month lag. At the last committee meeting, one member suggested that Price Waterhouse record the date each company report is received, and enter these dates on the consolidated report released to all members. This practice has been used in other trade associations, and is credited with reducing the reporting interval when employed.

A new report series on Air Duct Systems was established in January 1965 to accommodate state reporting. This new series is merely a recap of select items currently reported in the "Boards & Felts: Faced & Coated" category on the regular reporting form. The Committee recommends that members also report 1964 shipments of round and rectangular duct to serve as a base year.

MARKETING RESEARCH COMMITTEE REPORT (cont'd.)

A listing of all products in each category on the NIMA report form was prepared by company and trade name, and sent to each member on December 17, 1964. The Committee proposes to update this listing annually, or as requested by the Board of Directors. This listing is part of our continuing effort to ensure accuracy and utility in the NIMA statistical program.

SPECIAL PROJECTS:

The NIMA Board of Directors is considering the advisability of extending membership to producers of cellular organic insulations. The invitation would cover only that segment which is for contract application or maintenance in the mechanical segment of construction, that is: for job-site application to pipe, vessel and equipment, duct and cold storage. Excluded by definition are insulations for the roof and walls in metal buildings and in other structures. Also excluded are insulations for acoustical control, and factory applied insulations for appliance, transportation equipment, pre-fab cold storage, etc.

A statistical profile of the industrial insulation contract markets served by NIMA is presented in summary tables submitted as part of this committee report. Estimates provided for the year 1964 are those established by the Marketing Research Committee, and are offered to indicate the extent to which cellular insulations now participate in the NIMA markets. The Committee has left the projection of eventual market share of competing insulations to individual member companies for obvious reasons. As for the matter at hand, we do not believe that it is practical to extend membership to producers of cellular organic insulations at this time. This conclusion is based on the following observations:

- The predominant cellular organic insulation found in the NIMA contract markets at present is polystyrene. This material is shipped as slab stock, or bead board to local distributors; or as beads to local molders. Polystyrene then moves into many diverse end-uses, and the basic producers can only estimate the annual consumption by major end-use. Marketing is regional in nature due to the relative costs of shipping and the subsequent advantage held by local molders.
- Urethanes may be shipped as slab stock; or as a system of components to be molded locally, poured-in-place, or applied by spray gun. The list of producers is long and still growing and the matter of identifying end-use is even more problematic than that experienced by polystyrene producers.

MARKETING RESEARCH COMMITTEE REPORT (cont'd.)

- Finally, the present NIMA members account for the great bulk of industrial insulations through associated contract operations. With this fact in mind, the Committee suggests that NIMA members will also account for the great bulk of organic insulations sold for industrial application. In fact, some NIMA members now include organic cellular insulations in their product line.

COMMITTEE RECOMMENDATIONS:

In light of the committee report on organic insulations, it would appear that the members should be polled to determine interest in reporting their shipments of organic cellular insulations for job-site application to the mechanical segment of construction. Separate identification of component systems, and of rigid or elastomeric pipe and block insulations could be provided.

The Committee recommends that members be contacted to determine whether the current lag in reporting shipments can be reduced. If it appears that members can speed reporting without undue hardship, then the committee further recommends that Price Waterhouse record the date that each member's report is received.

While we understand that Philip Carey has been contacted in the past concerning membership in NIMA, they do represent the only significant industrial insulation producer that is not a member. The committee suggests that the state reporting of shipments may help influence Philip Carey because of their regional nature.

PIPE INSULATION MARKET: YEAR 1964
MANUFACTURER'S SHIPMENTS

<u>Material</u>	<u>Value (\$ Mil) (1)</u>
White Goods (2)	\$ 16.0
Fibrous	26.0
Cellular: Rigid	13.0
Flexible	6.0
Other (3)	2.0
Total	\$ 63.0
<u>Temperature Services</u>	<u>Per Cent</u>
Under 35°F	11
35°F to 350°F	56
350°F to 1,000°F	28
Over 1,000°F	5
Total	100

MARKETING RESEARCH COMMITTEE REPORT (cont'd.)

- (1) Net dollar value at the plant. Excludes freight, all discounts and allowances, and credit on returned and damaged goods.
- (2) Diatomaceous silica, calcium silicate, 85% magnesia, and asbestos fiber.
- (3) Blanket type, corrugated, reflective, etc.

VESSEL AND EQUIPMENT INSULATION MARKET: YEAR 1964
MANUFACTURER'S SHIPMENTS

<u>Material</u>	<u>Value (\$ Mil) (1)</u>
White Goods (2)	\$ 6.0
Fibrous	8.0
Cellular (3)	6.0
Other (4)	1.0
Total	<u>\$21.0</u>

<u>Temperature Service</u>	<u>Per Cent</u>
Under 35°F	20
35°F to 350°F	28
350°F to 1,000°F	48
Over 1,000°F	4
Total	<u>100</u>

- (1) Net dollar value at the plant. Excludes freight, all discounts and allowances, and credit on returned and damaged goods.
- (2) Diatomaceous silica, calcium silicate, 85% magnesia, and asbestos fiber.
- (3) Cellular glass, plastic, and elastomeric.
- (4) Cork, reflective, etc.

MARKETING RESEARCH COMMITTEE REPORT (cont'd.)

**CONDITIONED AIR DUCT INSULATION MARKET: YEAR 1964
MANUFACTURER'S SHIPMENTS**

<u>Product (2)</u>	<u>Value (\$ Mil)</u>	<u>(1)</u>
Liner and Wrap	\$ 23.0	
Pre-Fab Systems	7.0	
Total	\$ 30.0	

- (1) Net dollar value at the plant. Excludes freight, all discounts and allowances, and credit on returned and damaged goods.
- (2) Fibrous insulations dominate the air duct insulation market, with cellular materials representing less than \$1 million of the total.

**COLD STORAGE INSULATION MARKET: YEAR 1964
MANUFACTURER'S SHIPMENTS FOR JOB SITE APPLICATIONS**

<u>Material</u>	<u>Value (\$ Mil)</u>	<u>(1)</u>
Cellular (2)	\$ 13.0	
Other (3)	2.0	
Total	\$ 15.0	

- (1) Net dollar value at the plant. Excludes freight, all discounts and allowances, and credit on returned and damaged goods.
- (2) Cellular glass and plastic.
- (3) Fiber glass, rockwool, cork, Palco wool, etc.

Note: Amounts represent only material applied at the job site. Pre-fab walk-in coolers are not included.

**MIMA INDUSTRY SHIPMENTS, BY PRODUCT CLASS
NET DOLLAR VALUE AT THE PLANT
YEARS 1958-1964**

PRODUCT GROUP	1958	1959	1960	1961	1962	1963	1964
Pipe:							
85% Magnesia	4,774,864	3,437,565	2,520,920	1,933,894	1,506,090	1,219,180	(NA)
Calcium Silicate, etc.	11,955,368	11,526,766	12,570,553	13,005,875	12,561,719	13,626,460	(NA)
TOTAL	16,730,232	14,964,331	15,091,473	14,939,769	14,067,809	14,845,640	14,283,442
Blocks:							
85% Magnesia	1,943,125	1,455,782	1,099,804	847,932	711,521	575,900	(NA)
Calcium Silicate, etc.	5,861,380	4,975,640	5,643,241	4,852,282	4,059,264	4,321,332	(NA)
TOTAL	7,804,505	6,431,422	6,743,045	5,700,214	4,770,785	4,897,232	4,770,032
Cement:							
85% Magnesia	127,150	81,690	78,883	70,572	63,630	69,855	(NA)
Calcium Silicate, etc.	24,659	15,608	22,305	18,873	(NA)	(NA)	(NA)
TOTAL	151,809	97,298	101,188	89,445	63,630	69,855	73,517
SUB TOTAL	24,686,526	21,493,053	21,935,786	20,729,428	18,902,224	19,812,727	18,826,975

PRODUCT GROUP							
Loose & Granulated							
Blocks:	305,739	433,521	274,493	197,174	339,035	338,775	337,826
Cement:	2,583,760	2,191,593	1,899,525	1,829,135	2,020,850	1,920,173	1,784,743
Blankets:	1,589,701	1,153,873	1,083,476	983,278	823,495	841,704	830,899
Pipe (Fibrous & Cellular)	642,863	975,622	1,030,129	1,101,015	1,135,296	1,171,537	1,028,531
Board & Felt:	8,219,305	12,005,187	10,179,409	11,433,617	11,197,424	11,046,762	13,912,095
Blankets:	8,822,190	10,556,985	10,330,878	10,718,782	10,299,950	11,500,974	12,099,360
Board & Felt:	1,198,109	1,018,137	952,567	1,035,983	923,051	772,048	808,761
Blankets:	17,089,027	20,014,522	20,607,210	22,841,865	23,463,723	24,924,348	27,453,503
Board & Felt:	8,275,774	7,563,107	7,503,018	7,790,087	7,235,997	7,933,129	7,921,993
Blankets:	2,603,594	2,662,502	2,421,295	2,616,303	2,965,598	3,029,065	3,495,650
Board & Felt:	189,157	134,813	155,005	110,046	169,172	170,175	80,186
SUB TOTAL	51,519,219	58,709,863	56,434,005	60,857,285	60,565,591	63,648,640	69,775,597
GRAND TOTAL	76,205,745	80,202,915	78,369,791	81,386,713	79,467,815	83,461,417	88,606,572

BACKUP DETAIL FOR CATEGORIES NOW CONSOLIDATED AS BOARD & FELT: PLAIN

Blocks & Boards:	Cold Use	6,302,214	5,530,462	5,628,980	6,025,621	5,623,938	6,227,697	5,605,444
Felt:	up to 44 lb/cu. ft.	586,365	596,158	451,862	339,949	342,942	362,272	789,586
Board & Felt:	over 44 lb/cu. ft.--Plain	1,387,195	1,436,487	1,422,176	1,424,517	1,266,117	1,343,160	1,532,963
	Plain	8,275,774	7,563,107	7,503,018	7,790,087	7,235,997	7,933,129	7,921,993

NOTE: These insulations are exclusively for contract application to pipe, vessel, duct, and equipment in the mechanical segment of construction. Excluded by definition are insulations for metal building, transportation equipment, appliance, acoustic control, roofing and residential application.

MIMA Marketing Committee: 4/6/65

TECHNICAL & RESEARCH COMMITTEE REPORT

Mr. J. M. Barnhart reported on the activities of the Committee in accordance with the Minutes of the Meetings of the various Committees attached hereto and made part of these Minutes.

ROCK & SLAG SECTION REPORT

In Chairman P. L. Losse's absence, J. M. Barnhart read the report as follows:

The Rock & Slag Section met two times during 1964, at New York, January 30 and a second time at New York September 17. Both meetings were held just previous to the C-16 ASTM meetings which were at Philadelphia and Montreal respectively.

At these two meetings the following topics were discussed:

1. Thickness of pipe covering required to prevent condensation under various standard conditions of temperature and humidity.
2. Revisions to Federal Specifications HH-I-00558 and HH-I-00559.
3. Standard facings for pipe insulations.
4. The substance of a proposed Federal Specification for Mineral Fiber Duct Lining Material.
5. The elimination of fiber diameter requirements from Federal and Military Specs.
6. Definitions of terms used to describe the composition of thermal insulations.
7. Pipe covering thicknesses to be used in G. S. A. Specifications.
8. The New York State specification pertaining to thermal insulation.
9. G. S. A. Standard Specification for Piping, Ducts & Related Equipment.
10. Review of "k" values to be published in the ASHRAE Guide.
11. Review of ASTM specs requiring revisions.
12. Review and changes to Chapter 39 of the Bureau of Ships Technical Manual.

ROCK & SLAG SECTION REPORT (cont'd.)**13. Significance of AQL inspections as related to insulations.****GLASS SECTION REPORT**

Chairman C. E. Ernst reported as follows:

- 1. The latest draft of the condensation thickness tables for 90F and 90, 80, 70 and 50%RH, compiled from individual members, conductivities and thicknesses, was reviewed. Certain errors and inconsistencies were pinpointed, requiring a new draft. The value of the 50%RH thicknesses was also discussed with agreement that they should be retained. The revision should complete the tables for use by the member companies.**
- 2. Draft revisions of Federal Specifications HH-1-00558a and 00559a dated 1965 were subject to extended discussion by the Committee. The previous specifications dated November, 1963 were based on drafts combining five previous Federal specifications offered by NIMA.**

A year ago the committee suggested that the current specifications be revised to the form of the NIMA drafts for clarity and convenience of use. In the meantime a directive required that the specifications be referred to ASTM material specifications. The apparent purpose of this directive was cost reduction. Thus the draft revisions, except for listing of insulation forms, types and classes and pertinent reference specifications and standards, etc., are a simple listing of ASTM specifications with exceptions bringing them in line with the 1963 specifications.

The committee could see eventual advantages to both the Government agencies and NIMA in this approach, but immediately they could see serious disadvantages.

The ultimate advantage to the agencies would be automatic up-dating of specifications with considerably less man-hours involved. NIMA would gain by having only to concentrate its activity in ASTM.

The disadvantages to the agencies would be

- 1. Loss of control of specifications**
- 2. ASTM might cancel specifications without reference to HH-1-00558 and 00559.**

GLASS SECTION REPORT (cont'd.)

3. Current ASTM specifications are too broad to satisfy agency requirements.
4. All designing agencies, contractors, suppliers, etc., will have to maintain current ASTM specification files. Since ASTM specifications are not all current with HH-I-00558 and 00559 this will cause confusion, particularly with the exceptions included in the 1965 draft revisions.

Accordingly the Committee agreed that NIMA should strongly recommend against the ASTM approach for the present, and in favor of the NIMA versions of HH-I-00558 and 00559.

Since these specifications were on the agenda for the March 16 meeting of the Government T & R Committee it was also agreed that J. M. Barnhart and Washington members of the Committee discuss the matter with the proper Government personnel prior to this meeting.

The Committee also agreed that if the directive was mandatory the intent might be maintained by having the T & R Committee write all materials specifications.

A review of HH-I-00545 dated October, 1964, indicated the need for a number of minor changes plus a major revision of the table of sound absorption coefficients. Accordingly members will submit new values for this purpose.

3. It was agreed that a common basis for reporting air friction characteristics of Mineral Fiber duct liners would be friction correction curves based on the absolute roughness factor "e". The corrections would apply to the ASHRAE Guide friction values for galvanized steel.

The Technical Section of the Duct Committee is to consider attenuation values as a common basis for reporting sound absorption characteristics of mineral fiber ducts.

The task group on Mechanical Design of Air Duct Systems is to complete the second phase of their work.

4. The current draft of "K" values for the ASHRAE Guide were reviewed and J. M. Barnhart is to issue a new draft for final consideration.

GLASS SECTION REPORT (cont'd.)

5. The committee was asked to consider color coding of cartons. it was agreed that this is a merchandising rather than a technical problem.
6. Other business.
 - a. Experience has shown that committee work on Government application specifications could be simplified if such specifications were common for the same types of applications.

It was agreed that value engineers of all government agencies should be approached in this direction with the argument that they also would gain by reduction in work load.
 - b. The committee considered a suggestion that MIL-I-2818A maximum binder content be increased from 1.5% to 5.0% to cover low density metal faced mineral fiber blankets. An alternative suggestion to add a Class 2 category for low density blanket will also be considered.

MOLDED SECTION REPORT

In Chairman D. Davis' absence J. M. Barnhart reported on the activities of the Committee in accordance with the Minutes of their meeting which is attached hereto and made part of these Minutes.

DUCT SYSTEMS COMMITTEE REPORT

Messrs C. E. Ernst and J. M. Barnhart reported on the activities of the Committee in accordance with the Minutes of their meetings which are attached hereto and made part of these Minutes.

It was reported that Mr. H. Perrins, code consultant for the duct systems program, had died suddenly on March 23, 1965.

APPOINTMENT OF THE NOMINATING COMMITTEE

President P. D. Kaley appointed Messrs. M. W. Burleson, Chairman, T. S. Clousing and D. M. Nelson as the Nominating Committee to propose a slate of officers and directors for nomination for election at the Annual Meeting.