PLAINTIFF'S EXHIBIT WV-05905

001652

PLAINTIFF'S EXHIBIT 14178.00

MINUTES
of the
TECHNICAL & RESEARCH COMMITTEE MEETING
NATIONAL INSULATION MANUFACTURERS ASSOCIATION
Chicago, Ill. March 9, 1962

The meeting was called to order at 9:00 A. M. with the following in attendance:

H. P. Hoopes, Chairman	Fibreboard Paper Products Co.
L. L. Collogne	Mundet Cork Corp.
T. S. Clousing	M. H. Detrick Company
C. E. Ernst	Johns-Manville Sales Corp.
W. Gubar	Gustin-Bacon Mfg. Company
P. L. Losse	The Eagle-Picher Company
V. L. Miller	Pittsburgh Corning Corp.
E. F. Ott	Keasbey & Mattison Company
W. R. Seipt	Keasbey & Mattison Company
W. P. Sinclair	Union Asbestos & Rubber Co.
U. W. Smith	Baldwin-Ehret-Hill, Inc.
D. W. Wingerter	Johns-Manville Sales Corp.
R. C. Parlett	NIMA
J. M. Barnhart	NIMA

BASIS OF CALCULATING HEAT TRANSFER

A write up on this subject, dated 2/14/62, circulated to the Committee prior to the meeting was discussed. Several revisions were proposed. The write up with these revisions will be circulated to the Committee for approval and/or comments.

DEFINITIONS

The list of definitions applicable to thermal insulating materials dated 11/26/61 was discussed. Only minor editorial changes were made. This Recommended Practice is attached hereto.

COMMON BASIS OF PRESENTING ECONOMIC THICKNESS

It was explained that when examining the table of "B" factors in the Economic Thickness Manual irregularities in the values of "B" can produce an economic thickness table that would not rise continually, i.e., could drop back at certain pipe sizes.

Mr. Barnhart was asked to talk to Mr. W. C. Turner and try to ascertain as to why this happens. (Mr. Turner said that the primary reason this occurs is due to the sudden increase in costs of insulation for various pipe sizes.)

It was decided that smoothing out the values would be justified on the following basis:

COMMON BASIS OF PRESENTING ECONOMIC THICKNESS
(Based on average conditions)

ECONOMIC THICKNESS TABLES
(For pipe and flat insulation)

1. Utility or Power - Full year operation (8760 hrs.)
2. Process - Full year operation (8760 hrs.)
3. Commercial - Full year operation (8760 hrs.)
4. Commercial - Heating Season (5400 hrs.)

Conditions

1. Temperatures
   100 F to 1200 F in 100 F increments
   Note: Average of range

2. Use nominal thicknesses

3. Pipe sizes - as per preference

4. Average design - ambient still air - 80F

5. Surface coefficient - as per curve shown in Fig. 5, in write up on "Basis of Calculating Heat Transfer Through Thermal Insulation on Pipe & Flat Surfaces" (The basic of which has been taken from the ASHRAE "Guide and Data Book")

6. *Depreciation period*

	Plant & Insulation
Utility or power	20 yrs.
Process	15 yrs.
Commercial	20 yrs.

(b) Discussion on smoke and fire resistance of insulations and finishes was deferred for the present. The Committee does not feel it should duplicate the work that is being done by ASTM on this subject.

(c) Mr. W. R. Seipt brought to the attention of the Committee an article entitled "Stainless Failures by Stress Corrosion" featured in Hydrocarbon Processing and Petroleum Refiner, V41, No. 1 (Jan. '62). The article referred to magnesia insulation as a stress corroding material. Mr. Barnhart was asked to write to the Editor of the magazine informing him that his data was wrong and informing him that we would review articles pertaining to insulating materials prior to publication, if he so desires.

(d) Mr. Barnhart informed the Committee that BRAB is planning to publish technical data relating to thermal insulations. The Committee agreed that NIMA and the manufacturers could furnish data to BRAB and the government agencies only those values which were obtained by ASTM test methods.

Mr. Barnhart was requested to ask the NIMA Board of Directors as to the policy desired when other consumers request data not substantiated by ASTM test methods.

(e) The subject of QPL was discussed, especially the time and money involved by the manufacturers having tests made for qualification. It was requested that NIMA discuss this subject at the next Government T & R Committee Meeting. (i.e. where do manufacturers go to get reliable tests, can some of the tests be eliminated, etc.)

ADJOURNMENT

There being no further business, the meeting was adjourned.

Respectfully submitted

J. M. Barnhart

J. M. Barnhart

7. "F" Factor
   Utility or power - $12.00 per lb steam per hr
   $9,530 per million Btu per hr
   Process - $14.00 per lb steam per hr
   $11,110 per million Btu per hr
   Commercial - $16.00 per lb steam per hr
   $12,700 per million Btu per hr

8. "C" Factor - $1.30

9. Production cost of steam
   Utility or power - $0.60/1000 lb steam
   Process - $0.75/1000 lb steam
   Commercial - $1.00/1000 lb steam

10. "k" Factors - as per individual manufacturer

11. When using "D" Tables go to nearest higher breakpoint for temperature and "k".

ECONOMIC THICKNESS STUDY (LOW TEMPERATURE)

Mr. Barnhart was asked to ascertain whether the cost data needed by West Virginia University has been obtained. (Mr. W. C. Turner has indicated that the cost data received is adequate, however any further cost data received from manufacturers, contractors, etc., would be helpful).

Mr. Barnhart was asked to arrange a meeting of the special coordinating committees on this subject.

O.D'S OF THERMAL INSULATION FOR TUBES

The Molded Section reported that their section could not come to an agreement on insulation outside diameters for tubes. Mr. Barnhart was asked to circulate to the Committee the ASTM Table for IPS dated January 31, 1962, requesting approval and/or comments as to the acceptance of the Table for O.D.'s for tubes. The comments are to be returned to the NIMA office within 30 days. A summary of the results will be circulated to the Committee prior to the next T & R Committee Meeting.

OTHER BUSINESS

(a) Two requests had been received asking for recommendations for supports for cold and refrigerated piping. Mr. Barnhart was asked to write to the individuals informing them that basically the problem was not NIMA's responsibility for such design, and to advise them as to what factors should be taken into account when designing the supports.

(b) Discussion on smoke and fire resistance of insulations and finishes was deferred for the present. The Committee does not feel it should duplicate the work that is being done by ASTM on this subject.

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3/9/62

NIMA
RECOMMENDED PRACTICE
DEFINITIONS APPLICABLE TO THERMAL INSULATING MATERIALS

COMPOSITIONS

1. Mineral Fibers - A generic term for all non-metallic inorganic fibers. These fibers may be natural, such as asbestos, or may be manufactured, such as rock, slag or glass.

2. 85% Magnesia thermal insulation is composed principally of basic magnesium carbonate with reinforcing mineral fiber.

3. Diatomaceous Silica thermal insulation is composed principally of diamtoaceous earth with or without heat-resistant inorganic binder(s) and reinforcing mineral fiber.

4. Calcium Silicate thermal insulation is composed principally of hydrous calcium silicate with reinforcing mineral fiber.

5. Cellular Glass thermal insulation is composed of glass processed by fusion, to form a homogeneous rigid mass of hermetically sealed cells.

6. Amosite Asbestos thermal insulation is composed principally of amosite asbestos fiber with or without heat resistant inorganic binder and filler.

7. Mineral Fiber thermal insulation is composed principally of fibers manufactured from mineral substances such as rock, slag or glass with or without binder.

8. Cellular Plastic thermal insulation is composed of organic materials processed to form a homogeneous mass of cells.

FORMS

1. Pipe Insulation is thermal insulation suited for application to cylindrical surfaces of pipe and tubing.

   (a) Molded-type Pipe Insulation is thermal insulation preformed in cylindrical, semi-cylindrical or segmented sections to fit pipe and tubing.

(b) Blanket-type Pipe Insulation is flexible thermal insulation furnished flat in sizes to fit around pipe and tubing.

2. Block or Board Insulation is rigid thermal insulation preformed in rectangular units to fit flat surfaces or curved surfaces of diameters above 33 inches.

3. Insulating Cement is composed of a dry mixture of fibrous, powdery or granular materials which when mixed with water, applied as a plastic mass and dried in place, forms a monolithic thermal insulation.

4. Finishing Cement is composed of a dry mixture of fibrous, powdery or granular materials, which when mixed with water and applied as a plastic mass to thermal insulation, dries to a smooth, hard, protective surface.

5. Insulating-Finishing Cement is a dry mixture of fibrous, powdery or granular materials which when mixed with water, applied as a plastic mass, dries to form a monolithic thermal insulation with a smooth, firm surface.

6. Loose Fill Insulation is thermal insulation composed of a dry mixture of fibrous, powdery, or granular materials for installation between confining surfaces or as a top layer.

7. Blanket Insulation is flexible thermal insulation that can readily be conformed to curved surfaces, and which is suitably bound together to provide units of substantial area for handling and application and which may be faced or reinforced with confining media.

8. Felt Insulation is semi-rigid or flexible thermal insulation normally furnished in flat sheets composed of mineral fibers with or without binder.