MINUTES

of the

TECHNICAL & RESEARCH COMMITTEE MEETING

NATIONAL INSULATION MANUFACTURERS ASSOCIATION
New York, N. Y. September 14, 1967

MOLDED SECTION

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

H.P. Hoopes, Chairman	Fibreboard
T.S. Bassett	Johns-Manville
A. Kevlin	Owens-Corning
J. McAllister	Baldwin-Ehret-Hill
A. Pocius	Johns-Manville
W.C. Schwingen	Ruberoid
B.H. Tower	Johns-Manville

1. Proposed combined Mil Specs MIL-I-2781 and MIL-I-2819 were discussed per J. M. Barnhart's letter of July 27, 1967 to Robert G. Hall, N.S.E.C.

   a. A change in temperature classes is recommended as shown as follows:

      Class 1 - Temperatures up to 600 F
      Class 2 - Temperatures up to 1200 F
      Type a
      Type b
      Class 3 - Temperatures up to 1500 F
      Class 4 - Temperatures up to 1800 F

   b. J. M. Barnhart's letter of July 27, 1967 regarding MIL-I-2819 was agreed on.

2. The ASTM Specification for Stress Corrosion of Austenitic Stainless Steel was discussed. It was agreed that there is too much variation in test methods to combine them into one recommended procedure.

3. MIL-I-24244 - The group discussed the details and philosophy of this specification.

   a. Performance test versus chemical analysis, e.g. for chlorides.

   b. Certification of compliance and sampling procedure which members may interpret differently, i.e. test for each order and each lot (size), or test once and continue to certify as long as there is no change in formula or production method.

c. Recommendation to Board of Directors that NEMA authorize a group from the Molded Section to approach the appropriate Government Agency or Agencies requesting clarification of ambiguities in MIL-I-24244.

d. The members also suggest that J. M. Barnhart contact other industry associations concerning their present or expected difficulties with comparable specs, dealing with stress corrosion of austenitic stainless steel, for other materials.

4. HH-I-523C

a. Regarding paragraph 3.4.4. The members recommend a change to ". . . aluminum foil shall not be less than 0.001 inch thick. . ."

b. Regarding paragraph 3.4.4.1 and paragraph 3.4.5.1, the committee section recommends that both be changed to delete ". . . of the paper surface. . ." as regards flame spread not to exceed 25.

5. The committee discussed the Westinghouse specification pertaining to nuclear reactors and primary containment area. It was agreed that since this is for "canned" material, it does not pertain to molded insulations.

6. I.D.C.N.A. The group discussed briefly the compilation to be presented to the full committee on September 15, 1967.

Respectfully submitted,

T.S. Bassett

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MINERAL FIBER SECTION

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

T.C. Campbell, Chairman	Owens-Corning
R.P. Austin	Certain-Teed
J.B. Dorsey	Johns-Manville
C.E. Ernst	Johns-Manville
W. Gubar	Certain-Teed
S.K. Heard	Owens-Corning
W.T. Irwin	PPG Industries
L. Lach	Johns-Manville
K.M. Ritchie	Baldwin-Ehret-Hill

FEDERAL SPECIFICATION HH-I-558A

As a result of the meetings held in Washington, D. C. on July 20 between the Government T & R Committee, the Corps of Engineers and GSA, this specification, which was issued March 7, 1967, was reviewed. The Government had stated they felt that the terminology "semi rigid" was ambiguous and suggested that it should be dropped from the specification. After discussion, it was decided that NIMA would recommend that when HH-I-558 is next revised, the definition of Form A in paragraph 1.2.1 be changed to read "Form A - blocks and boards, rigid" dropping the words "and semi rigid".

Table I - "Sizes" - Should be amended in the thickness column for Form D (pipe insulation) to add the word "nominal[4]". Note 4 shall read "See paragraph 3.5.1.1". Paragraph 3.5.1.1 should be amended to read "..... Thicknesses available for various pipe and tube sizes are nominal. Actual thicknesses will vary in accordance with manufacturers' standard sizes. Greater thicknesses are available by combining two or more layers of insulation.....".

Table III "Thermal Conductivity" - (of flexible blankets) - K factor data for textile fiber insulation should be changed as follows:

MEAN TEMPERATURE	B - 1	B - 2
25	.30	.29
50	.32	.31
75	.34	.33
100	.37	.35
200	.53	.50

Table IV - "Flexible Blankets to 450°F" - Under the heading Class 1, change description to read "up to 4½ pcf". Delete the column "above 4½ pcf". This change is recommended as there are no flexible blankets commercially available at densities greater than 4½ pcf.

Paragraph 6.2 (J) - Delete reference to Form D, Type IV so that this paragraph would then apply to Form C, Metal Mesh Blankets. This change is recommended as blanket type pipe insulation is not available with metal on both sizes and is generally available in one type of metal facing only so that a reference to blanket type pipe insulation (Form D, Type IV) in this paragraph under ordering data is confusing.

FEDERAL SPECIFICATION HH-I-00545 (MINERAL FIBER, DUCT LINER MATERIAL)

The Committee reviewed a rewrite of this specification dated 9/1/67 prepared by Charlie Ernst which incorporated all of the changes and suggestions of the April 6 meeting. Most of the changes were editorial and are as follows:

Paragraph 1.1 - Third line change word "and" to "to" so that the Scope reads "This specification covers mineral fiber insulation.....to provide sound attenuation in systems.....".

Paragraph 1.2.3 - Under Type I - Flexible - change sequence of Widths to reverse their order starting with the smallest.

Paragraph 2.2 - Other Publications - Change the reference for Fire Hazard classification to ASTM E-84.

Paragraph 3.8 - Mold Growth and Humidity - Add a new sentence "The mold shall not be spread beyond the inoculated area and no significant growth shall be observed." In reference to test methods at end of paragraph, add "and 4.4.7".

Paragraph 3.9 - "Temperature Resistance" - Change reference to test methods from 4.4.7 to 4.4.8. Delete words at end of paragraph "in specified tests".

Paragraph 3.14 - "Thermal Conductance" - After the headings, Type I and Type II in Table I - Maximum Thermal Conductance (C), insert an asterisk which will refer to the following note:

> *"The Conductance (C) for thicknesses over 1" is inversely proportional to the conductance of 1" material."

In the table under the heading Type II, delete the conductivity heading and conductances listed for 1/2" material.

Paragraph 4.4.7 - "Temperature Resistance" - Change to read "three 8" x 8" x 1" samples.....".

Paragraph 4.4.8 - "Erosion" - Change to read "The 1" thick insulation.....".

ASTM SPECIFICATION C553

Negative ballots received as result of a circulated draft of this specification were reviewed with the following changes being proposed.

Paragraph 1.1 - "Scope" - In third line, remove "up to 1000°F (538°C)". Temperature limit need not be included in the Scope as it is spelled out in Paragraph 2, the classification for each of the three types.

Paragraph 2.1 - Change the description of the three types to read as follows:

Type I Resilient Flexible - for use to 350°F (177°F)
Type II Flexible - for use to 450°F (232°C)
Type III Flexible - for use to 1000°F (538°C)

This revision would delete the words "below ambient and above ambient" for Types I and II and the words "above ambient" for Type III. It was felt that the deletions were unimportant as Paragraph 1.1 (Scope) states that the product may be used on heated surfaces or cold surfaces below ambient temperature. It was further felt that Type III insulation, while normally used for hot equipment, could be satisfactorily used on equipment operating below ambient temperature and that the specification should not restrict this possible usage.

Paragraph 3.2 - "Construction" - Change the word "inorganic" to "mineral" so that the paragraph reads "The insulation covered by this specification shall be composed of mineral fibers with or without added binder...".

Paragraph 5.1 - "Physical Requirements" - In Table 1 of Thermal Conductivities, the heading for Type II material should read "up to 4½ pcf". There should be no column for insulation heavier than 4½ pcf, as none are available.

Under Type III Insulation, delete reference to density. Add the following K factors:

Mean Temperature	K Factor
400°F	.76
500°F	1.20

Paragraph 8.2 - "Flexibility" - Change the reference to "the sample as received" to read "a 12" x 12" x 1" piece of insulation...".

It is felt that all testing to determine whether a product is flexible or rigid, etc., should be conducted on a 1" thick sample so as to properly categorize the material. Certain insulation materials which are "flexible" in a 1" thickness might be classified as "rigid or semi-rigid" if tested in thicknesses of 3" or 4". This could cause great confusion with the specifying and purchasing factors and would also serve to improperly classify the product with regard to thermal conductivity and other physical properties of "flexible" or "rigid" materials.

This Committee will undertake to follow this recommendation in all future specifications which it considers.

General - There is no specification referenced in Section 8, "Methods of test" for determining maximum temperature limits. It is felt that ASTM should quickly develop a suitable specification for mineral wool insulations which could be used in determination of "minimum upper service temperature limit". At present, there is disagreement among members of NIMA as to proper test method.

ASTM SPECIFICATION C378 & C392 (COMBINED)

This proposed specification was not reviewed in detail as results of letter ballot have not yet been received from ASTM Committee members.

It was agreed, however, that when this specification is reviewed, consideration will be given to elimination of the words "below ambient and above ambient" in each of the five classes. This would be consistent with the previous comments regarding ASTM C553.

FEDERAL SPECIFICATION HH-B-100A

Jack Barnhart distributed copies of this specification for "vapor barrier materials and pipe and duct insulations" and asked that the members of the Committee review it and send their comments to him by September 30. He will consolidate these comments and pass them on to GSA, who is working on this specification.

General

A. Jack Barnhart distributed copies of letters sent by NIMA to the Naval Ship Engineering Center, Washington, D. C. during the past several months commenting on proposed revisions to the following specifications:

MIL-I-22023	"Insulation Felt, Thermal and Sound Absorbing Felt, Fibrous Glass, Flexible"
MIL-I-742	"Insulation Board, Fibrous Glass"
MIL-I-15475	"Insulation Felt, Thermal, Fibrous Glass, Semi Rigid"
MIL-I-2818	"Insulation Blanket, Thermal, Fibrous Mineral"

B. The subject of fire hazard classifications was discussed. It was again stated that NIMA should encourage the establishment of classification categories such as Class A, Class B, etc., wherein Class A materials would have Maximum Flame Spread of 25 and Maximum Smoke Developed of 50 with the other classifications having higher ratings. Charlie Ernst agreed to summarize the information contained in the AMA Catalog and in Federal Specification SS-B-118. If agreeable to the Committee, these classifications would be proposed to Underwriters Laboratory so that, hopefully, a standard series of classifications could be used in all specifications by all agencies.

C. The subject of standardization of K factor information on flexible insulations was discussed. It was the consensus of the Committee that this had been accomplished in the recently issued Federal Specification HH-I-558 to be used as a guide in future work on other specifications involving similar materials.

D. It was suggested by Walter Gubar that, in the future, each Committee member should send copies of all correspondence regarding Committee projects to all members rather than merely directing their comments to Jack Barnhart. This would enable all members to understand the thoughts and feelings of the various member companies, and should lead to more productive Committee meetings. It was agreed that this recommendation would be adopted.

Respectfully submitted,

Thomas C. Campbell