FELLOWSHIP REPORT

MYRIL C. SHAW

RESEARCH FELLOW

ASBESTOS TEXTILE INSTITUTE

PHILADELPHIA TEXTILE INSTITUTE

PHILADELPHIA, PA.

REPORT #54

June 9, 1961

FELLOWSHIP REPORT

Introduction

The activities of the Secretary and Fellow have been so interrelated during recent months that it seems appropriate at this time to make a joint report covering the several projects and assignments that have been pursued. Attention has been directed in the interest of 1) The National Stockpile Purchase Specification; Asbestos-Chrysotile, P-3-R2, 2) U. S. Department of Health, Education and Welfare - Public Health Service, Occupational Health -- Interest in an industrial survey to determine the current status the several varieties of asbestos (chrysotile, crocidolite and amosite) as industrial health hazards, 3) Federal Specification SS-C-00466b revisions, 4) Watertown Arsenal, Ordnance Materials Research Office - Department of Defense, Technical Analysis of Asbestos Textiles, and 5) Cerastex.

National Stockpile Purchase Specification, Asbestos-Chrysotile, P-3-R2.

On February 15, 1961, several members of the Institute met with Mr. Harry Sharpe, Dept. of Commerce, Miscellaneous Metals and Minerals Division, and other members of various Federal agencies concerned with the subject specification for the purpose of reviewing and revising it in light of present day materials and requirements. The results of this conference were reported at the last meeting of the Institute and the recommended revisions were reviewed. On the basis of our recommendations, a new proposed revision for this specification was issued through OCDM on April 21, 1961 and was given limited circulation for further review. We were contacted on May 22nd by Mr. Gnam and asked to meet informally with a group of interested governmental agencies representatives to further discuss the proposed revisions. We did so on May 31. There still remains some minor clarifications, however, for the most part, the proposed specification will permit and cause only those fibers that are suited for textile operations to be included in this program.

U. S. Department of Health, Education and Welfare - Public Health Service - Occupational Health - Interest in an industrial survey to determine the current status of asbestos as a health hazard.

During the latter part of April we were contacted by Dr. Kenneth Smith, Johns-Manville Corporation who invited us to join him in a meeting with Dr. Thomas F. Mancuso, Chief, Division of Industrial Hygiene, Department of Health of the State of Ohio and Dr. Antionio Ciocco, Professor and Head of the Department of Biostatistics, Graduate School of Public Health, University of Pittsburgh. This meeting was held in Pittsburgh on Wednesday, May 3, 1961 and served to provide us with background and preliminary information regarding a growing concern on the part of the U. S. Public Health Service as to the current status of asbestos, in its several forms, as a hazardous material. A second meeting, called by Dr. Harold J. Magnuson, Chief, Division of Occupational Health was held in Washington on Thursday, June 1, and was attended by a group of physicians representing industry, medical research men and representatives of the Division of Occupational Health. Included in this group were Dr. Kenneth Smith, Johns-Manville Corp.; Dr. Paul Cartier, Quebec Asbestos Miners Association; Dr. Sanders who does or did at one time have considerable interest in the health

problems in the State of North Carolina, and Dr. Arthur J. Vorwald, an authority in this field of interest.

Dr. Kenneth Smith is with us today and will discuss in some detail the reasons for this current interest and will review the content and results of the two meetings.

Federal Specification SS-C-00466b.

At the close of the last meeting several points in this specification were in need of clarification. In an effort to simplify paragraph 3.3.1, Fabrication and Textures, certain terms and qualifications were generalized to the extent that unanimous acceptance on the part of the members represented was not obtained. Also, it was suggested that paragraph 3.3.6.1, Style 1, Grade AAA, Metallic cloth, be expanded and clarified. However, since the time of that meeting, only one member company has submitted written suggestions and it is not known whether there is now acceptance on all points or whether an area of disagreement still exists.

During the time of our recent meetings in Washington, we endeavored to confer with Mr. Chilcote and others at the Bureau of Ships regarding this matter, however, Mr. Chilcote was out of town and there was no one else available with whom we could discuss the subject.

Watertown Arsenal, Ordnance Materials Research Office - Technical Analysis of Asbestos Textiles.

We recently received word from Mr. T. E. Dunn, Watertown Arsenal, regarding a project currently being pursued by this agency, designed to standardize and unify asbestos textile specifications. This news does not come as a surprise to us, our work with this agency several years ago in connection with specification MIL-C-10316 and MIL-T-4117A, served to indicate that this development was on the way. In this analysis they are seeking ways and means of organizing and grouping asbestos textile materials so that specifications may be written that will not be duplicating in content. They have asked that we submit recommendations for this endeavor.

In the analysis submitted, the following classifications have been established:

a) Cloth, asbestos
b) Tape, asbestos
c) Thread, asbestos
d) Insulation, asbestos, electrical

It is our opinion that such a classification would be incorrect and certainly not complete. A more meaningful classification would perhaps be as follows:

a) Cloth, Asbestos.
Plaim
Metallic

b) Tape, Asbestos
Electrical
Industrial

c) Yarn, Thread and Cord, Asbestos

d) Lap and Roving, Asbestos (Electrical, Insulation)

e) Tubular Sleeving, Asbestos

There is much work to be done in this area and this agency will require all of the assistance we can afford to contribute if the contemplated reorganization is to be clear and meaningful.

Cerastex

We have continued to study the properties and characteristics of Cerastex, the ceramic bonded asbestos textile. Formulations composed of 1/3 asbestos cloth and 2/3 ceramic binder have been produced in tubes and sheets and the latter studied with respect to strength properties over the temperature range from room conditions to 1800°F. In this study, the following average values for modulus of rupture were obtained.

250°F -- 6100 psi
500°F -- 4445 "
1000°F -- 1150 "
1250°F -- 1330 "
1500°F -- 1333 "
1800°F -- 2430 "

Further, when samples having dimensions 2-1/4" x 6" x 1/4" were heated on one side only for 1 hour at two elevated temperatures the following corresponding strength characteristics in terms of modulus of rupture were obtained.

500°F -- 6320 psi
800°F -- 3990 "

In addition, Cerastex tubes were shaped and the possibilities of glazing such materials were investigated. The ease with which such materials can be handled and shaped, glazed or encased should make them highly desirable for unique ceramic and refractory applications.

Mr. A. P. Levitt, Chief of the High Temperature Materials Branch, Watertown Arsenal Laboratories, Watertown, Mass., writing in the publication Ordnance, May-June 1961, makes the following statement:

"As the limits of most engineering metals are now being reached or exceeded, interest has grown in ceramics because of their relatively attractive high-temperature properties such as high melting point and high chemical stability. It should be emphasized however, that although melting point is a useful criterion in selecting a ceramic for high temperature service, it also must be selected on the basis of its chemical compatibility with its environment. In many cases the current deficiencies of ceramics can be overcome by the use of composite structures or ingenious designs."

It is in this area of service that Cerastex should find most significant applications. We have endeavored to indicate very generally some of the ways in which this material may be handled and fabricated and as specific requirements are posed additional methods and materials of this type may be expected.

FELLOWSHIP REPORT

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RESEARCH FELLOW

ASBESTOS TEXTILE INSTITUTE

PHILADELPHIA TEXTILE INSTITUTE

PHILADELPHIA, PA.

REPORT #56

December 8, 1961

Introduction

The attention of the Fellow during recent months has been concerned with a number of quite diversified projects ranging from the chemical constitution of our basic raw fiber materials to the construction and properties of a variety of fabrics that will best satisfy the service requirements for certain Federal Specifications. In addition, certain clarifications, made necessary by the publication of misleading information regarding the properties and capabilities of asbestos, have been undertaken and it is hoped that the desired ends have been accomplished before gross misrepresentation was affected.

Action on the part of the Board of Governors in revising the project list under which the Fellow might conduct the activities of the Fellowship Program is welcomed and it is felt that the work as outlined may well serve in the development of new products for our industry and in providing a better understanding of the new market requirements for which the products of our industry may be adapted.

Revision - Federal Specification SS-C-466c.

This specification currently under revision by the Bureau of Ships, U. S. Navy Department, has during recent years, been revised and expanded to an extent that it has been difficult for the suppliers of the items therein covered to keep up with the changes. In addition, as one discusses with the various shipyard design department engineers those cloths that are applicable to the specification, it is not unusual to find them basing their thinking and their designing upon the subject specification carrying the dates 1949 or one of the interim specifications of 1954 or 1959. If it were not for the intelligent cooperation between those individuals who sell the asbestos materials necessary for shipboard lagging and the design engineers who adapt them for given applications, one might feel that organized confusion was rampant in this area usage. However, as we have been privileged to discuss this subject with personnel at four of the larger shipbuilding yards it has been apparent that, in most cases, the sales representatives of our industry are something more than ordinary salesmen, being sales engineers who are able to offer valuable engineering services along with suitable and serviceable products. This combination of attributes has contributed immeasurably to the continuing and increasing usage of asbestos textiles for shipboard lagging.

In an effort to assist in bringing about some clarification in current endeavors to revise this specification, we conferred with the agency with whom responsibility for writing this specification currently rests, namely the Bureau of Ships and specifically, Mr. Joseph Chilcote within that agency. During these conversations we presented a questionnaire that covers many points which we felt were pertinent to the subject and would serve to determine the desirable properties and characteristics of those asbestos textiles which are to be used as lagging materials and are covered under this specification. We further advised that it was our intentions to visit several of the shipyards where this specification serves as the basis for the purchase of considerable quantities of asbestos textiles and there obtain first hand information and answers to our questions. This approach received the hearty approval of representatives of the Bureau of Ships and we were encouraged to proceed as outlined.

The questionnarie, in part, sought to determine:

I. What factors are most important in determining the cloth to be used:

a. Tensile strength
   1. If so, in what direction or is direction a factor?
   2. If direction is not a factor would not a square or balanced weave with similar strength in all direction be desirable?

b. Weight
c. Weave construction
d. Permeability
e. Handability and Conformability
f. Ability to be pasted or cemented
g. Ability to be painted
h. Price
i. Appearance
   1. freedom from lint
   2. freedom from uneven weave
j. Tearing properties for application and forming.

II. What properties do asbestos-glass combination cloths possess that make them more desirable than plain asbestos cloths?

III. What desirable properties of a cloth contribute most markedly to the ease and speed of application?

During the week of November 6, we were afforded an opportunity to visit three shipyards in the New England area -- Portsmouth Naval Shipyard, Portsmouth, N. H.; Bethlehem Steel Company, Shipbuilding Division, Quincy, Massachusetts; and Electric Boat Company, Groton, Connecticut. Our conversations during these visits were directed primarily to the clarification of the requirements which should be included in the proposed revisions in specification SS-C-466c. At each yard we were also given the opportunity to visit the shops where lagging cloths are applied in the construction of the special insulations that are installed in ship construction. Through this experience there was afforded an opportunity to observe methods and techniques that are sometimes unique with a specific yard. As we discussed the specification and the related questionnaire with those qualified designers, engineers and shop foremen at each yard, we obtained a fairly clear understanding of some of the more important provisions that should be covered in the subject specification. The following notes set forth some of the general impressions gained:

1. Tensile strength is not critical over the range of the asbestos textiles currently furnished under this specification. That is, the minimum or filling direction strengths of any of the cloths currently furnished are apparently adequate for this service. One cloth with a 40 and 30 pound breaking strength in the warp and fill directions respectively is currently finding acceptance for this service.

2. Weight is of only minor significance.

3. Construction is of importance (1) as it influences the ease with which a cloth may be shaped or made to conform to a valve or T-duct or some other more intricate form of insulation and (2) as it establishes the openness which in turn may dictate pasting and painting techniques.

4. Items under d, e, f and g are related to 3.

5. Price is, of course, of some concern in the over-all considerations but the price of the cloth is minor when considered against the labor costs involved in applying the cloths to the insulation.

6. Appearance is an important consideration on the part of the craftsman and the skill of the installation workmen is often measured by appearances. To this end, cost as a function of the time necessary to accomplish the most desired end enters into this consideration as a part of the over-all cost. Freedom from lint and loose particles is often necessary and desirable.

7. Tearing properties are apparently insignificant. We found no one who attempts to tear the cloths. All that we spoke with cut the materials as desired.

8. The characteristics of the cloths that are to be applied against this specification which was most often spoken of as being desirable was that they should be "dry-woven". A dry woven cloth is apparently most easily and securely pasted and is also more easily shaped and made to conform to difficult forms.

9. The 1.10 pound glass cloth, 18P10G, was found to be much more popular and desirable than the 1.40 pound glass, 22P10G, cloth in the yards visited. Again, in the glass asbestos combination cloth dry spun yarns combined with the 13 x 9 construction make for a more readily and easily conformable fabric and one that pastes up to a serviceable and good appearing job.

10. There is apparently very little of the 2.25 cloth used in the Underwriters and AA grades. It is used on the outside of removeable pads that are sewed in combination with the 2.60# wire inserted cloth which serves as the inside or hot side application. There is apparently little reason for carrying other than grade AAA in the 2.25 pound cloth in this specification.

11. In the wire inserted cloths the 2.60 pound cloth is chiefly used. The heavier 3.50 pound cloth has been or will be discontinued in some cases when the present stock is depleted.

12. There appears to be little interest or use of the 1.40 pound plain asbestos cloths.

The opinions here expressed were formed as a result of our conversations at the yards noted and while our contacts have been few in number and there are additional yards and activities that purchase asbestos textiles on the basis of this specification, many of whom we hope to confer with later, it is felt that the observations here offered should serve as a basis for some consideration of the specification revision.

We would now offer the following observations and suggestions for consideration.

(1) Paragraph 6.1.1 defines the parameters of "intended use" for U. G. cloths as follows:-"This cloth and tape are intended for use as a jacketing material over insulation where the temperature of the insulated surface is more than 125°F. (52°C), except that they are not to be used on fittings and flanges, nor where they will be in contact with heated meatl."

It would seem that this is a restrictive provision which places a bottom or lower temperature limit of serviceability which might work to a disadvantage if asbestos textiles were to be furnished for some applications in place of brattice cloth. Should not this section be revised to delete this restriction?

(2) There was not a great deal of interest shown at the yards visited in the 2.25 pound cloth in grades below AAA. We understand, however, that there are applications on surface ship applications where abrasive resistance is a qualifying characteristic and under these conditions Grades UG and AA are used quite extensively. The Grade AAA, Style 1, is used extensively as the outside cover in the construction of removeable covers and pads which are hand sewed in combination with the Grade AAA, Style 1, wire inserted cloth, to enclose Amosite thermal insulation. It would seem therefore that perhaps all grades of Form 1, Style 1 cloths should be retained in this specification.

(3) The Style 2 cloths (1.40 pound per square yard) in both Underwriters Grade and Grade AAA seemed to be of very little interest. There was no evidence that this style was being used in any of the yards we visited.

(4) The Style 4 cloth (1.05 - Underwriters Grade) was not encountered and there were therefore no comments regarding its usefulness.

(5) In the proposed revision it is suggested that the old Style 5 be changed to Style 4 and Style 5 as such be omitted as an item in this specification. It has been suggested by some manufacturers however that this would work a hardship for the suppliers since the Style 5 is a well known and recognized classification of the trade and in making a change in number only would confuse purchasing procedures for a considerable length of time or until the yard design personnel had been properly informed and educated to the change. During this change-over period of transition, which could conceivably cover the better part of a year, considerable quantities of asbestos textile materials would be unidentified as applicable for this specification. It has been suggested therefore that the old Style 5 be retained in the revised specification rather than the suggested Style 4.

The cloths covered in the proposed specification under Style 5 include two 1.10 pound fabrics and one 1.40 pound cloth, both asbestos-glass combination materials. The 1.10 pound cloth would seem to be most popular and it was stated that this lighter weight cloth was more conformable to intricate and difficult shapes than the 1.40 pound cloths, however, there are still considerable quantities of the 1.40 pound cloth being used and it would therefore seem that the two weights should perhaps be retained. However, there appears to be little reason for the two 1.10 pound cloths which have such widely different tensile strength values. It would seem logical to consider for inclusion here the two asbestos-glass combination cloths that are shown in the "Typical Cloth List" set forth in the second edition of the Handbook of Asbestos Textiles,

(1) 18P10G having 13 x 9 construction and a breaking strength of 90 and 70 pounds and (2) 22P10G having 18 x 9 construction and a breaking strength of 125 and 70.

(6) Dry woven cloths which permit the best possible characteristics for good cementing, filling and painting would seem to be one of the more important features desired in most lagging cloths. There are occasions, however, when this feature is not important, such as when hand sewing is used to assemble pads and covers. In such cases the cloths are often wet with water to facilitate the sewing.

It could well be that there may be a treatment or conditioning for the cloths here under consideration that would still further improve the cementing capabilities of those cloths used for lagging purposes.

(7) The metallic cloths covered in the proposed revision include two 2.60 pound cloths and one 3.50 pound cloth. One of the 2.60 pound cloths contains .008" monel wire while the other cloth of the same weight contains .006" nickel-wire. It is claimed that the nickel-wire cloth is more easily worked, handled and sewed than is the cloth that contains the .008" monel, however, whether this feature is a sufficient justification for its inclusion in this group is questionable.

The heavier cloth, 3.50#, is being discontinued in some yards in favor of the lighter weight (2.6#) metallic cloth. Since most of this metallic cloth is used in fabricating special covers and insulations which are hand cut, formed and sewed, the handability, weight and conformability are important considerations. The 2.6# seems to meet most of the requirements and it is questionable if the heavier cloth is necessary.

(8) On the basis of our discussions with the few aforementioned authorities, we would suggest that the following table be incorporated as a part of the proposed revised specification. This table would serve to replace the many individual tables presently carried in the specification and would provide a comparative analysis of all the cloths covered.

Presented in this table are all of the cloths currently covered in the proposed revision, however, those cloths that do not appear to be applicable have been crossed out and the seven cloths which appear to be the most applicable for this specification are checked.

Class	Style	Weight	Construction		Breaking Strength						A.T.I. Design.
			Warp	Fill	Blue Stripe Und.		Red Stripe AA		Green Stripe AAA		
					Warp	Fill	Warp	Fill	Warp	Fill	
1	1	2.25	18	9	90	40	100	40	110	45	36P10
	2	1.40	19	10	80	40			80	40	22P16
	2	1.40	24	12	75	35					22P22
	3	0.75	21	17	40	30					22P18
	3	0.90	15	11	45	40					15P26
	3	1.05	20	15	65	40					17P10-17
	4(1)	1.10	13	9	125	70					18P10G
	4	1.10	14	8	65	40					18P10G
	4(1)	1.40	18	9	85	60					22P10G
2	1	2.60	18(2)	9(2)					No Stripe		42M10
	1	3.50	18	9							56M10

(1) Change back to style 5.

(2) Yarn - 1021 -- 2 Ply, 10 cut, AAA Asbestos with 1 strand .008" Nickel-Copper Alloy, 58% Nickel, Min.

Asbestos Content

During the course of the last meeting of Sub-Committee A-4, A.S.T.M., discussions were pursued relative to the reliability and accuracy of the procedures currently accepted for the determination of the asbestos content of asbestos-cotton (or other organic carrier additive) textile products. The question involves the promiscuous use of the factor .86 in the mathematical calculations carried out as part of this determination, without due regard for the true factor which varies with different chrysotile fibers. Recent check tests have revealed that the average factor for Canadian chrysotile is currently running between .8675 and .87.

The effect of a seemingly small difference in this factor can be illustrated by tests recently run to determine this influence. In a test conducted on an Underwriters grade cloth, using the factor .86, the asbestos content obtained was 81.69%, however, when a factor of .87 was used the content was found to be 80.76%. In a second test, using a Grade AA cloth, the .86 factor yielded a 92.15% asbestos content, while an .87 factor yielded 91.09%. Finally, a Grade AAA cloth, showed 101.44% asbestos when the .86 factor was used while the .87 factor gave a content of only 100.275%.

Obviously, a determination that yields a 101.44% asbestos content for a material that was initially 100% asbestos, provides a degree of questionability for the technique involved in the test method.

In this connection, we would refer your attention to our Fellowship Report #15, dated March 27, 1950. At that time it was reported that the average factor for some fifteen Canadian fibers had been found to be .8705 and for the African fibers approximately .86. It was then recommended that care should be exercised in determining the applicable factor when a high degree of accuracy is desired.

As consumer requirements and inspections become more closely applied it may well be that more carefully controlled quality testing by the manufacturer and supplier will be necessary. It would seem unwise at this point to blindly accept the factor of .86 and apply it in all cases to asbestos content determinations when it is realized that for most Canadian fibers the factor will be nearer to .87 and that within this range of variation an asbestos content may be in error to an extent of from 1.0% to 1.25%.

It is therefore recommended that accurate factors be determined for the several fibers and fiber mixes involved in each manufacturers production and that the proper factors be applied to the appropriate products produced therefrom.

Aluminized Asbestos Textile

In the October, 1961, issue of Textile Industry, there is carried an advertisement by the Thermo-Chem Corporation which endeavors to promote the virtues of "Alumination by Thermo-Chem". In this full page advertisement there are shown two swatches of cloth, one labeled "Woven Asbestos - Starts to break up at 450°F", and the other swatch carrying the notation "Same Asbestos Aluminated - 4.5¢/sq. ft - Shrugs off 2500°F.".

Our concern and exception was directed to the first notation which could have been construed to indicate that all asbestos cloth breaks down ("unaluminized") at 450°F.

We have corresponded with both the Thermo-Chem Corporation and the editor of Textile Industries setting forth our concern and asking that steps be taken to correct and clarify the misrepresentation there set forth. Replies have been received from the two representatives and we have been assured that the necessary corrective measures will be pursued in the very near future.

High Temperature Textiles.

In the November, 1961 issue of Materials in Design Engineering, there is presented a Progress Report covering Ultra High Temperature Textiles by Myron J. Caplan, Fabrics Research Laboratories, Inc., and Dennis E. Johnson, Arthur D. Little, Inc. The contents are indeed interesting and the article should be "must reading" for all members of our association who are interested in looking into the future in order to learn something of those materials that may be competitive with asbestos. Metal filaments as textile elements are considered, as are such ceramic fibers as fiber glass, quartz or silica fibers, aluminum silicate, potassium titanate and graphite. Asbestos is referred to very briefly but the terse finality with which the reference was concluded aroused our concern to the point that we wrote to one of the authors challenging the position there expressed. The statement which aroused our concern states: "Insufficient heat resistance immediately eliminates conventional fiber glass and asbestos from consideration". My letter addressed to Mr. Johnson questioning this statement is attached as a part of this report.

As an industry, we cannot permit misinformation, especially when carried in those widely circulated periodicals such as Materials, to go unchallenged or unanswered. We are certain that the capabilities of asbestos as a textile fiber have not been fully evaluated nor have such textiles been intelligently applied to many of the high temperature applications currently being encountered. However, we have in our file, test results where asbestos in textile forms have provided the basis for materials that has proven serviceable at 3000°F for extended periods of time; at 5000°F for 90 seconds, and at 4000°F for 82 seconds. These are but a few of the actual experiences obtained with asbestos products.

Perhaps, if we are afforded the opportunity to conduct further discussions with the authors of the article here referred to, it may be possible that some reconsiderations may be directed to the applicability of asbestos as a high temperature fiber in the areas of interest here considered. This will be our purpose as we endeavor to pursue this matter further.

New Project List.

The new project list which has been drafted and will serve as the basis for discussions within the several active committees during the course of this meeting prior to its general acceptance as the formal Fellowship Program of the Institute, contains projects that should serve all interested facets of the membership. Investigations that are somewhat fundamental in nature are included along with activities designed to obtain information concerning new

products and new applications for asbestos textile materials. It is hoped that as these endeavors are pursued the scope and areas of usefulness for the products of our industry may be extended considerably beyond the parameters of todays range of usefulness.

Conclusions

It is hoped that the work and activities of the Fellow as here reported will prove of interest and value to the membership. Many of the actions and activities reported at this time will require further attention and as these matters are concluded the membership will be so advised and the results reported.

Budget Committee Report

The Budget Committee of the Asbestos Textile Institute for the year 1961-1962, consisting of the following members: - Mr. A. E. Whitfield, Treasurer, Mr. J. A. Bettes, Jr. and Mr. S. J. Peele, Jr., met with President W. S. Hough and the Secretary on November 14, 1961 to draft a budget for 1962. Following detailed considerations of all of the accounts to be included in this budget and based upon the expenditures experienced during the years 1960 and 1961, the following budget was drafted and it was recommended that it be submitted to the Board of Governors of the Institute for approval at its next meeting.

The recommended budget is as follows:

General Fund

Secretary's Salary	$ 3,050.00
Secretary's Travel	1,000.00 (1)
Secretary's Retirement Program	670.80 (2)
Office Expense	1,800.00
Legal Expense	2,000.00
Legal Travel	150.00
Auditing Expense	325.00
Meeting Expense	2,000.00
New Exhibit Expense	500.00
Incidentals	200.00
	$11,695.80

Fellowship Fund

Fellowship Salary	10,325.00
Fellowship Grant	3,500.00
Laboratory Assistance	100.00
Laboratory Expense	250.00
Incidentals	250.00 (3)
	$14,425.00

Total $ 26,120.80

The proposed budget is in most respects the same as the budget approved for 1961, however, exceptions to be noted are indicated by references (1), (2) and (3) following certain of the accounts listed above and by the omission of certain accounts which were a part of the 1961 budget and have either been satisfied or will be satisfied at an early date from the funds made available through the assessments accumulated to satisfy the 1961 budget. These latter items include:

Nuclear Studies --	$750.00
Fiber Testing Committee Consultant	300.00
Fiber Testing Committee Publication	500.00
	$ 1,550.00

Regarding the numbered accounts, the following explanation is offered:

(1) Following a review of the Fellowship project list it was determined that considerably more traveling on the part of the Fellow will be required if the proposed assignments are to be carried out. It was therefore felt that the traveling expenses allowable should be increased from $600.00 to $1000.00 for the year.

(2) The Secretary's Retirement Program allowance of $670.80 is a new account which covers the annual premium on a retirement insurance policy carried by the Secretary. It was the feeling of the Committee that some consideration in regard to retirement benefits should be extended the Secretary in view of his length of service with the Institute and it was felt that assuming the responsibility for the continuation of this insurance policy would provide a means of achieving this end. It was agreed that the premium due from January 1, 1962 to the anniversary date of October 7, 1962 in the amount of $503.10 should be met and paid from the surplus remaining in the 1961 budget. Thereafter, the premium payments in the amount of $670.80, payable on the anniversary date, October 7 of each year through 1966 and $642.75 through 1972, would be assumed by the Institute.

(3) The Fellowship Incidental Fund was increased from $100.00 to $250.00, the additional funds being made available to permit the replacement of the indicating meter which serves as a part of the Mapes Analyser.

Concluding the foregoing clarifications given and justifying the separate accounts on the basis of the several activities of the Institute, its active committees and the Fellow, the total budget for 1962 amounts to $26,120.80. This figure may be compared to $26.450.00 plus $10,000.00 (Handbook expenses) or a total of $36,450.00 for 1961 and $27,050.00 for 1960.

Myril C. Shaw,
Secretary

FELLOWSHIP PROJECT LIST

GROUP A.

I. Obtain more complete information covering the fundamental properties of chrysotile.
   a) Determine the effect and influence of minute or trace quantities of such impurities as iron, sulphur, etc., upon physical, electrical and hygroscopic properties.

II. Study the results of the effects of nuclear radiation upon the physical and chemical properties of chrysotile and products in which chrysotile may be a component.

III. Obtain more complete information on asbestos-plastic combinations through consultation and cooperative endeavors with resin and plastic manufacturers such as Bakelite and any other prime suppliers of resins.

IV. Make a survey of asbestos-glass combination materials and seek new market possibilities for asbestos through such combinations.

V. Review all Federal and Industrial specifications with a view toward establishing the proper selection of asbestos textiles to meet the requirements of the specifications. Federal Specification SS-C-00466b is of immediate interest in this regard and attentions are to be directed here in an effort to provide those asbestos textiles that will yield the proper service, require optimum labor considerations for application, provide the necessary appearance requirement features and effect economies where possible.

VI. Develop light-weight asbestos cloths in the range of 12 ounces (.75#) to replace Brattice cloth in specification SS-C-00466c and similar requirements covered in other specifications and applications.

VII. Work with specification writers in an effort to make specifications more realistic. It is felt, for example, that the yarn count as carried in current specifications is often restricting and is frequently a deterent in supplying the most suitable and economic cloth for a given application. Other conditions such as width and thickness may also be meaningless for certain applications and their inclusion as a specification parameter is obviously superfluous. It is suggested that this entire subject be reviewed and efforts made to correct current inconsistancies.

GROUP B.

I. Investigate the role of asbestos as a high temperature reinforcement and binder in organic and inorganic (Cerastex) formulations.

II. Investigate the field requiring textiles which possess temperature serviceability slightly above that of cotton and where fabrics which are treated in order that they may have only a degree of flame spread retardancy are now being used.

GROUP C.

I. Investigate and evaluate textile products that may be composed of asbestos-cotton combinations wherein the asbestos content may be considerably below the conventional grades (75%-80%). It is felt that combinations such as 50% asbestos and 50% cotton or even 70% or 90% cotton may yield a textile having unique properties which may serve to fill the requirements for new fields of application.

Myril C. Shaw,
Research Fellow
Asbestos Textile Institute

ATI-114

Minutes of the Sales Promotion Committee of the Asbestos Textile Institute

In Attendance:

W. S. Hough
J. T. Griffis
J. A. Brown
A. J. Scanlan
M. C. Shaw
W. M. Deckman
H. E. Sunbury
B. C. Bond
E. A. Schuman
J. A. Bettes
S. J. Peele

Absent:

Tallman-McCluskey

Representatives of all member companies were in attendance with the exception of Tallman-McCluskey. This representation included 10 persons.

The order of business was as follows:

1. The display cases are now located at UCLA and will remain there through January at which time they will be moved to California at Berkeley. Efforts will be made to exhibit the cases at other West Coast colleges or Western colleges following the second semester at California.

2. In a general discussion regarding the handbook, Dr. Shaw pointed out that he is using the old books for school distribution and the new ones for industry. To further publicize asbestos and the asbestos industry as well as render a service to engineering students the committee approved the sending of a handbook to major engineering colleges in the United States. Dr. Shaw will canvas the list of colleges and make the distribution from the available stock of books. Accompanying each book will be a questionnaire which we hope will be filled in and returned to the Institute.

3. Mr. Jack Brown of Raybestos-Manhattan reported that representatives of the Defense Material Service had approached his Company with a request to run 2 tons of Arizona fiber into roving and lap for further evaluation in wire and cable applications. Raybestos-Manhattan will carefully evaluate and record all conditions of running and present a factual report to the Government Agency. A contract has been completed to cover this test.

4. The Fellowship Project List was reviewed and clarification made of the intent of each item and the objectives we hope to attain. It was concluded that all six items in the Group "A" list would be pursued concurrently and if at the next meeting Dr. Shaw feels the need for a priority rating is desirable same will be determined.

The Group "B" and "C" items were reviewed and clarified and are to be considered second and third in importance behind Group "A".

5. Raybestos-Manhattan presented a project for consideration with respect to the use of cotton fabrics in duct work of heating and air conditioning systems and their possible replacement with asbestos fabrics. Dr. Shaw will investigate the status.

6. The proposed revision of Federal Specification SS-C-466b was reviewed and recommendations made regarding several items.

7. Suggestions were made by the committee concerning information being furnished Asbestos Magazine for the business conditions sections.

8. Attention was called to the recent publication of an article in the Chicago Tribune entitled Asbestos - Versatile Fiber with Future That Looms Bright.

Respectfully submitted,

S. J. Peele, Jr., Chairman
Sales Promotion Committee