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American Society For Testing and Materials
Committee E-34
Task Group on Naturally Occuring Inorganic Fibers

MINUTES OF THE THIRD MEETING

Philadelphia, Pa.
18 and 19 April 1974

PRESENT

The list of those present, together with the mailing list, is presented in Appendix I.

AGENDA

The agenda is attached in Appendix 2. Refer to 3.1.5

BUSINESS

3.1 Chairman's opening remarks

- 3.1.1 The meeting was called to order by Chairman A.A. Winer, at 10:00 a.m. on Thursday, 18 April 1974, in the East-West Conference Room at ASTM Headquarters.
- 3.1.2 The Chairman introduced Mr. P. G. Brown who will act as our ASTM Coordinator, and ASTM Staff Liaison.
- 3.1.3 It was announced that Mr. J. Rothrock is the ASTM Manager under whose jurisdiction Committee E-34 lies. It was also mentioned that Mis. M. O'Connor, ASTM Administrative Assistant, will also be available to assist us with our task.
- 3.1.4 It was announced that Mr. A. Kooiman has been delegated by the Editorial Subcommittee as the Official Liaison Member to the Task Group on Naturally Occuring Inorganic Fibers. It was indicated that Mr. Kooiman would not be able to attend the entire meeting and therefore would be given the floor first to ensure the presentation of his report. Refer to 3.2.
- 3.1.5 It was decided that the Agenda would not be followed in the sequence foreseen so as to leave the more contentious topics to the end. Accordingly, it was decided to keep 'Definitions' for the end, and to take up 'Discussion of Assignments' as the penultimate item.

3.1.6 All attendees were requested to identify themselves.

3.1.7 The minutes of the last meeting were approved.

3.2 Report from the Editorial Subcommittee Representative

3.2.1 The General Editorial Guidelines for E-34 Standards were distributed, and are appended hereto as Appendix 3. The guidelines were explained in considerable detail by Mr. Kooiman.

3.3 Limitation on the number of Task Group members.

3.3.1 It was reported that the Task Group now has a total of twenty-six members and the opinion was offered that this is as large a group as it is possible to have on a Task Group and to maintain efficiency. Accordingly, it was proposed that consideration should be given to restricting the membership to those presently members.

3.3.2 It was objected that this cannot be permitted in ASTM.

3.3.3 It was argued that an extensive mailing list represents a major burden when heavy documents must be air-mailed frequently for expediency.

3.3.4 It was countered that ASTM would undertake to assist the Task Group in financially and physically supporting its duplicating and mailing activities.

3.3.5 Accordingly, it was decided not to restrict membership on the basis of excessive size.

3.3.6 It was confirmed that appointments to the Task Group could be made by the Chairman of the Task Group with the sanction of the Vice-Chairman of the Committee.

3.3.7 It was reported that the letter ballot on rules for expulsion of inactive members had given the following results

Positive	14 (87.5% of returns)
Negative	1 (6.25% of returns)
Not Voting	1 (6.25% of returns)
Ballots returned	16 (return = 61.5%)
Ballots mailed	26

The negative vote was reportedly accompanied with a recommendation to consider the adoption of rules similar to those of Committee D 01; By-Laws, items 5.1 and 5.2.

- 3.3.8 This recommendation was adopted and the Recording Secretary was directed to attach a copy of the items in question to minutes of the meeting, for the consideration of the Task Group. Refer to Appendix 4.
- 3.3.9 It was stated that the Task Group should make every endeavor to avoid dropping members, and accordingly rules for expulsion were only of academic interest. This statement was supported by several attendees. It was countered that inactive members can easily prevent the attainment of the 60 percent minimum return on letter ballots, and that if this should eventually become the case, then formal rules would be needed.
- 3.3.10 It was decided to leave the rules in abeyance until their need became necessary.
- 3.4 Discussion of Assignments
- 3.4.1 Work Practices
- 3.4.1.1 It was reported that the development of work practices is well under way in conjunction with the Standards and Technical Committee of the Asbestos Information Association of North America (AIA/NA) who are working with the OSHA Division of Health Standards. It was stated that OSHA want to complete the revision of regulations on asbestos by the end of 1974 (including promulgation). Work practices, monitoring and warning labels were mentioned as areas of endeavor but it was made clear that the emphasis will be on work practices. It was reported that twelve work practice documents are nearing completion and are scheduled for submission to the OSHA, Division of Health Standards, in July 1974. It was explained that six of the work practices were intended for the Asbestos Industry in general, and six others were prepared for specific manufacturing industries using asbestos. It was confirmed that these work practices could be reviewed by the Task Group as soon as they could be completed and submitted to OSHA. It was explained that the work practices deal with activities such as housekeeping, unloading, warehousing and transporting materials, and that in keeping with OSHA's request, they are general in nature and avoid being highly specific about any particular topic.

3.4.1.2 It was also reported that the AIA/NA are also producing three or four additional work practices aimed at certain asbestos end-users, but that these will not be considered by OSHA. It was stated that these too would become available to the Task Group for review.

3.4.1.3 The opinion was expressed that OSHA will place the emphasis on work practices and attach diminishing importance to atmospheric monitoring in work places. The opinion was also offered that the standard of 2 fibers/cm³, by membrane filter counts, would remain until more evidence or a better test method becomes available.

3.4.2 Environmental Measurements.

3.4.2.1 Both members charged with the section of the criteria document bearing upon environmental measurements were absent, and consequently their progress could not be reported. It was reported by the Recording Secretary that he was aware of correspondence indicating that methods based upon both the midget impinger and the membrane filter were being considered.

3.4.2.2 It was reported that the Asbestosis Research Council of Great Britain (ARC) (Whose Secretary was present) and the Asbestos Information Committee of Great Britain, both of which organizations were represented, had reviewed extensively the British Asbestos Regulations covering the usage of asbestos. It was stated that these organizations are of the opinion that the possibilities of accepting significantly different atmospheric monitoring standards appear remote unless additional unexpected indisputable medical evidence becomes available.

3.4.2.3 It was reported that the American National Standards Institute (ANSI) Committee Z9-5 on dust control, whose Chairman was in attendance, is presently producing a standard entitled 'Design of Dust Control Systems' for the asbestos consuming industry. It was stated that this would be submitted for approval in April of 1974. It was anticipated that this would become an ANSI document by August 1974. It was requested that this document be submitted for Task Group review as soon as feasible. It was explained that standard design practice used for ventilation of other dusts is completely inadequate for asbestos.

3.4.3 Medical

- 3.4.3.1 It was reported that Dr. M. Grimmard of the Canadian Environmental Health Directorate, had submitted a written report entitled 'statement on Health Effects of Asbestos and Related Considerations. It was indicated that this report had only been delivered that morning due to the Canadian Postal strike. In view of the fact that this report could not be reviewed prior to the meeting, and in view of the absence of Dr. Grimmard, Chairman Winer read the following excerpt: 'At the present time, it would seem the membrane filter method and the (2 fibers longer than 5 μ m)/ml standard could serve until a better method is developed. In the opinion of our scientists at the Environmental Health Directorate, Health Protection Branch, Department of National Health and Welfare, the ideal method should measure the total respirable mass and be gravimetric in nature. This is the pattern followed for pneumoconiosis-producing dusts and the fibrous nature of asbestos should not be an insurmountable obstacle to attaining that goal.'
- 3.4.3.2 The above report was commented as follows: In view of the fact that dust in various areas of the Asbestos Industry varies significantly in its asbestos and rock components, it is difficult to appreciate how a gravimetrically determined atmospheric concentration standard could be applicable to all areas concerned. Furthermore it was implied that similar manufacturing operations at different locations may have atmospheres with differing ratios of fibre to rock dust, such that gravimetrically based standards could not be applicable to even fairly narrow segments of the Industry. It was explained that spherical particles can be handled gravimetrically easily enough by removing oversize particles by prefiltration and getting only the respirable particles. It was implied that such an approach might even be fairly good for amphiboles with chunkier particles, but not for curly chrysotile. It was further expounded that the health hazard is obviously caused by the fibres, that can act by virtue of their shape and size and therefore we should seek to evaluate the quantity of such entities, which is not necessarily related to the total quantity.
- 3.4.3.3 It was commented that in the case of asbestos fibers, the diameters are most significant in the determination of settling speeds and of their possibility of being respiration. It was also indicated that both diameter and length may be determinant in the possibility of clearance by the macrophages.

- 3.4.3.4 It was stated that the present standard of two fibres per cc originates from the recommendation of a Working Group to the World Health Organization. It was also recalled that the Conference at Lion in 1972 had recommended that interlaboratory trials on an international scale be used in an effort to tighten up the test method to improve reproducibility.
- 3.4.3.5 The following comments were added: The scope of the assignments made to Drs. Grimmard and Pelnar is restricted to Medical and Biological Effects of exposure, and only such considerations should properly be included in that scope, to the specific exclusion of monitoring methods. Any monitoring method is acceptable if a relationship can be shown between an instrumental reading and the quantity of the significant atmospheric particles. The midget impinger is satisfactory for textile operations. The Quebec Asbestos Mining Association (QAMA) is presently funding a study to establish the relationship between midget impinger counts and the quantity of the significant particles. The fact that the 1972 Conference in Lion directed the Subcommittee on Physical and Chemical Properties of Asbestos toward the task of improving the membrane method indicates that method is not completely satisfactory.
- 3.4.3.6 The opinion of a representative of a regulatory agency was voiced as follows: Microscopic counting methods are not satisfactory for atmospheric monitoring and some other approach is needed.
- 3.4.3.7 Dr. Pelnar next reported verbally as follows: Dr. Grimmard's report was received only today and could not be reviewed in time.

The biological effects of asbestos are well known from experience. One effect is lung fibrosis due to lengthy exposure to asbestos dust concentrations. It is due to the scarring of the gas-exchange tissues in the lung.

It is a progressive disease and is irreversible.

Also associated with exposure to asbestos is broncogenic cancer, which is the same kind of neoplasia caused by tobacco. Epidemiological studies link broncogenic cancer to exposure to asbestos. However, it is likely that the link is in fact to asbestosis disease rather than to asbestos exposure alone.

Finally mesothelioma has been associated with exposure to asbestos. The pleura (lining of the chest cavity) and of the peritoneum (lining of the abdominal cavity).

In animals, it has been possible to induce experimentally fibrosis and mesothelioma, by the administration of heavy dossages, but never broncogenic cancer.

Asbestosis appears to be dose-related and no disease is found below a given threshold limit of exposure. Since the incidence of broncogenic cancer is lower among those not exposed to asbestos, and among those without fibrosis, it appears probable that the enforcement of a lower threshold limit of exposure could allow us to avoid this cancer. That is, we could hope to achieve a state with no mortality due to broncogenic cancer in excess of that for an equivalent population that is not exposed to occupational concentrations of airborne asbestos dust.

In the case of mesothelioma, it is difficult to establish if this tumor is dose-related because it is extremely rare and statistically valid data is absent. There is evidence suggesting a dose-response relationship and existence of a certain threshold. One type of asbestos, crocidolite, has particularly been linked to mesothelioma. But apparently some cases of mesothelioma occur without any exposure to asbestos.

Attempts have been made to link tumors of the digestive tract to asbestos exposure but these are inconclusive relationships and even then, only the very highest exposures appear hazardous.

The immediate problem is that we have no exact evidence on the quantitative exposure to which individuals are exposed particularly in the past. Since asbestosis may take 20 years and mesothelioma may take 40 years before symphoms manifest themselves, the evaluation of exposure is difficult at best. Attempts to work with animals are difficult because we have to work with much higher doses than humans would ever encounter. Therefore, one approach is to evaluate the exposure received by non-victims. That is those who have received moderate exposure without ill effect. Among the occupationally exposed the large majority die of causes unrelated to asbestos exposure. Even among the groups with the very highest exposure,

the majority do not develop any asbestos-related diseases, and only some ten percent of the most exposed experienced an increased mortality rate in the study of almost 12,000 employees of the asbestos mines in Quebec.

Establishing a link between asbestos exposure and mesothelioma is not an easy task. Diagnosis of mesothelioma is difficult, if not impossible, without autopsy and so some cases used in epidemiological studies are doubtful and such studies are open to biases. Animal experiments showed that other materials than asbestos also caused mesothelioma. In a substantial proportion of human cases no exposure to asbestos was found and some other cause must be postulated. For example a French physician Dr. Chrétien suggested that pneumothorax used for treatment of pulmonary tuberculosis was the cause of subsequent mesothelioma in his several cases.

Still an open question is whether the known biological effects are due to the physico-chemical nature of asbestos or rather to its fibrous shape. There is evidence indicating that any fibrous material of a certain size and aspect ratio produces comparable damage to living tissue (Stanton, Pott, and Friedrichs) and that non-fibrous material chemically identical with asbestos is inert (Pott and Friedrichs).

The particle dimensions that appear to be most significant from a cytologic point of view are a minimum length in the range of 10 μm and a maximum diameter of about 0.5 μm . If diameter is much larger, a single tissue cell cannot swallow it. If length is shorter, then the entire particle can be taken up by the cell, thus allowing the cytoplasmic membrane to seal itself and preventing leakage into or out of the cell. It is postulated that such leakage may be implicated in pathologic reactions.

The ability of crocidolite to penetrate tissues due to its harshness and to be respired deeply due to its compact acicular shape has been offered as an explanation

for its mesothelial activity. In contrast, chrysotile fibres, being curly, are more likely to impinge in the upper airways, and thus be regurgitated without reaching the accinus. One study has shown that 70 percent of the inhaled crocidolite was excreted in the feces. 40 percent was cleared immediately by the lung.

- 3.4.3.8 The question was raised as to why injection experiments on animals are always based upon the mass of material instead of upon the number of particles. It was explained that the number is much more difficult to determine, and appears likely to be related to the mass.
- 3.4.3.9 The question was raised as to why pleural calcification had not been included as a disease associated with asbestos. It was explained that pleural calcification is an interesting phenomenon, but not a medical problem since it causes no symptoms and in no way inconveniences the individual. Pleural calcifications occur frequently in persons with no occupational exposure to asbestos. In the Thetford Mines area of Quebec, there are several mining operations on the same ore body and the workers at some mines have a comparatively high incidence of plaques whereas those at the neighboring mine are free from plaques. Pleural plaques have been very rarely linked to mesothelioma. These plaques have been linked to exposure to talc (talc free from asbestos). Also the talc without asbestos is associated with plaques. Calcifications do not appear to be dose related and may appear in workers receiving very low exposure for a long time. In all cases, there are no adverse health effects.

3.4.4 Introduction

- 3.4.4.1 It was reported that a number of ASTM Standards with a section entitled 'Introduction' had been reviewed, and that none of these offered guidance for an introduction suitable for a criteria document. It was stated that a suitable format had been found in an already published criteria document, and that a first draft had been produced on that basis. It was explained that this had not been submitted for approval because of the likelihood of a need for revisions once the other sections of the criteria document became available. It was stated, however, that in view of the relative brevity of the introductory section, and in so far as it could be

of interest to receive the input of the Task Group, it would be submitted without further delay.

- 3.4.4.2 It was suggested that the introduction should include an explanation of the relationship of this criteria document to other existing documents such as those of:
- National Institute of Occupational Safety and Health (NIOSH)
 - International Labor Office (ILO)
 - International Agency for Research of Cancer (IARC)
 - National Research Council (NRC) of Canada (Document of the NRC of Canada on Asbestos)

3.4.5 Biologic Effect of Exposure

- 3.4.5.1 Refer to 3.4.3. Both topics were reported under Medical.

3.4.6 Environmental Data and Control

- 3.4.6.1 Refer to 3.4.1

- 3.5 The meeting was adjourned, and continued on Friday 19 April at 9:00 a.m., at the same location.

3.6 Definitions

3.6.1 Definition of fiber

- 3.6.1.1 It was reported that the Definitions Subcommittee at their last meeting on 28 November 1973 in Houston, Tex., had recommended the use of existing ASTM definitions for the terms 'fiber' and 'asbestos' and accordingly these had been submitted to letter ballot of the Task Group.

- 3.6.1.2 It was reported that the ballot results had been mailed but not received due to the Canadian mail strike. These results are reported hereunder:

Positive	11	(68.8 percent of returns)
Negative	5	(31.2 percent of returns)
Not voting	0	
Ballots returned	16	(return = 61.5 percent)
Ballots mailed	26	

- 3.6.1.3 It was stated that the negative ballots with the reasons for negative votes, and the extensive suggestions and counter proposals submitted, together with the qualified positive votes, had been received from the Recording Secretary only the day before due to the Canadian mail strike.
- 3.6.1.4 It was reported that a meeting had been scheduled between Messrs. A. M. Harvey and T. D. Oulton (both being assigned the task of definitions) to take place prior to the Task Group meeting. In view of Mr. Oulton's absence, it was stated that Messrs C. S. Thompson, R. McCarthy and A. M. Harvey had met, reviewed the input resulting from the letter ballot, adopted definitions for 'fiber' and for 'asbestos', and had obtained the sanction of Mr. Oulton by telephone.
- 3.6.1.5 Both definitions were distributed and are attached hereto as Appendixes 5 and 6. (Note that the definition of a Naturally Occuring Inorganic Fiber in Appendix 6 is an updated version of the definition listed with that for 'Asbestos' in Appendix 5.
- 3.6.1.6 The definition of 'fiber' was questioned with regard to the note claiming that a non-fibrous material does not become a fiber merely because its aspect ratio increases through processing. It was explained that the type of processing meant was restricted to size reduction. It was argued that such non-fibrous particles could none-the-less be hazardous. It was countered that such materials would fall beyond the scope of the Task Group.
- 3.6.1.7 It was commented that the choice of a 3:1 aspect ratio for the membrane filter method had been made arbitrarily, to facilitate rejection of non fibrous particles. An excellent account of how the fibres came to be defined the way they are for membrane counting was given and is appended hereto as Document No. 9 in Appendix 7
- 3.6.1.8 It was argued that a particle should not be considered as a fiber only because it was fibrogenic, and the example of silica particles was cited.
- 3.6.1.9 The statement was made that all types of mining except mining for coal, phosphates, and possibly a few other non-metallic minerals, releases amphibole particles that are not necessarily fibrous, and the experience of years

of such activities has indicated that exposure to non-fibrous particles is not hazardous.

- 3.6.1.10 It was countered that to be biologically significant, a particle must be respirable.
- 3.6.1.11 It was also argued that shape and size rather than chemical composition are increasingly recognized as the significant particle characteristics.
- 3.6.1.12 The opinion was stated that fibers can definitely occur in talc but that according to the proposed definition these could not be considered as fibres. It was argued convincingly that fibers under 25 μm long could not have an aspect ratio less than 100:1.
- 3.6.1.13 It was stated that since the British approach to counting filter membranes omits those particles over 3 μm in diameter because they are not in the respirable range, therefore aspect ratio is not all that important. There was general agreement that the exclusion of fibers with a diameter over 3 μm constituted sound acceptable practice.
- 3.6.1.14 It was proposed that the definition of a fiber be accepted so as to have a definition acceptable to the mineralogists, and that additional definitions covering fiber agglomerations and fragments of fibers be considered for atmospheric monitoring purposes.
- 3.6.1.15 It was argued that the definition would be acceptable if the following sentence were added to the end of the second sentence in the note: 'Therefore fibre fragments may have to be evaluated for atmospheric monitoring purposes'.
- 3.6.1.16 It was questioned that a mineralogical definition could be useful if additional definitions were necessary to cover the biologically active fibrous entities.
- 3.6.1.17 It was agreed that separate definitions for 'naturally occurring inorganic fibers' and for 'asbestos' would be submitted for adoption, and that the latter would be defined in terms of the former. In addition it was agreed that the entity of interest for atmospheric monitoring would be defined as a 'fibrous particulate' and would encompass fiber agglomerations as well as fiber

fragments and would have a maximum equivalent diameter of 3 μm and a minimum length of 5 μm , and might be further defined for each fiber covered by the criteria document.

3.6.1.18 It was agreed that the words 'at least 100' on line 3 would be changed to 'in the order of 100'

3.6.1.19 Refer to 3.6.3.5 to 3.6.3.8 for further revisions.

3.6.2 Listing of Fibres

3.6.2.1 It was reported that the Recording Secretary had been instructed to draw up a list of all the naturally occurring inorganic fibers, together with a summary of the ones coming under the purview of the Task Group, at the last meeting in Houston. It was stated that three lists had been drawn up including an all-inclusive listing, another list including only fibers of commercial or legal significance (those presently regulated), and finally a list of fibers proposed for addition to the scope of the Task Group. It was explained that these had been mailed but not received due to the mail strike. Accordingly, the final listing was read out in extenso, and is reproduced hereunder:

NATURALLY OCCURRING INORGANIC FIBERS

UNDER THE PURVIEW OF ASTM COMMITTEE E34

<u>TYPE</u>	<u>NAME</u>	<u>ALSO KNOWN AS</u>
1. Amphiboles	Anthophyllite	Gederite
	Amosite	Cumingtonite Grunerite
	Crocidolite	Glaucophane Riebeckite
	Tremolite	Ferroactinolite
		Tremolite - Actinolite
2. Calcium Silicates	Wollastonite	CaSiO_3
3. Serpentine	Chrysotile	
4. Clays	Chlorite	
	Kaolinite	$\text{Al}_2 \text{Si}_2 \text{O}_5 (\text{OH})_4$

- 3.6.2.2 It was objected that the above lists includes fibers for which no hazard has ever been demonstrated and for which inclusion would be harmful and damaging.
- 3.6.2.3 It was proposed that only the commercially significant asbestiform minerals be retained as follows:
- Chrysotile
 - Amosite
 - Crocidolite
 - Anthophyllite asbestos
 - Tremolite asbestos
 - Actinolite asbestos
- 3.6.2.4 It was proposed that 'commercially significant' would include fibers produced as by products of other minerals.
- 3.6.2.5 Several objections were voiced with regard to the inclusion of tremolite. It was agreed to refer to tremolite asbestos as opposed to fibrous tremolite.
- 3.6.2.6 Objections were raised with regard to the use of the term 'biologically active' on the grounds that anything can influence biological activity.
- 3.6.2.7 It was objected that there is a continuous gradation of materials ranging between tremolite and actinolite in composition and that the better term to use would be Tremolite-Actinolite. It was resolved that both tremolite asbestos and actinolite asbestos would be listed.
- 3.6.2.8 In support of the opinion that asbestos fibers occurring as by products of other mineral processing operations, it was stated that one study of the miners at a talc mine had revealed that 25 out of 29 miners had respiratory health problems against an expected normal incidence of 8 out of 29 men. It was mentioned that this mine had heavy concentrations of airborne dust, as measured by the OSHA Method.
- 3.6.2.9 It was mentioned that there is a small tremolite asbestos mine in Italy and it was enquired if any study of the health of those miners had been made. It was confirmed that no such study has been made.
- 3.6.2.10 The problem was raised of defining asbestos fibres to which the population at large was exposed. It was felt that this would come under the control of the Environmental Protection Agency (EPA) as opposed to OSHA and need

not concern the Task Group at this time.

- 3.6.2.11 In support of having separate regulations for each type of asbestos, it was stated that crocidolite fibers are harsher and because of their structure they have the greatest potential for surface electrical charges. It was implied that such charges allow these fibres to act as carriers for other substances, and in particular for carcinogens. It was also argued that a separate standard exists for silica, and that another separate standard covering talc was on the list of documents scheduled for later publication by OSHA.

3.6.3 Definition of Asbestos

- 3.6.3.1 The semantics concerning tremolite asbestos and actinolite asbestos were discussed at length.
- 3.6.3.2 It was resolved that the definition given in Appendix 5 should be changed as follows: Line one, change 'hydrated silicate' to 'naturally occurring hydrated silicate fibrous'.
- 3.6.3.3 It was agreed that airborne asbestos particles of interest with regard to atmospheric monitoring would be identified as 'fibrous particulates' and would include fiber agglomerates and fiber fragments.
- 3.6.3.4 The following additional definition was adopted: 'Asbestiform - matter structured in the form of asbestos'. It was agreed that an additional sentence should be inserted after the first sentence in the definition of asbestos, to read as follows: 'Such materials are asbestiform'.
- 3.6.3.5 It was agreed to change the definition of 'fiber' in Appendix 6 as follows: In the note, change the last word from 'processing' to 'comminution'.
- 3.6.3.6 It was resolved to change the definition of 'fiber' in Appendix 6 as follows: In the note, line 8, change 'parent material' to 'naturally-occurring precursor'.
- 3.6.3.7 The following change to the definition of 'fiber' in Appendix 6 was adopted: In the note, line 5, change 'could' to 'may'.
- 3.6.3.8 It was resolved to modify the note in Appendix 6 as follows: Change the second sentence to: 'Fibers of these dimensions can be broken into parts of fibers that

may maintain their same surface properties and activities.'

3.7 Other Business

- 3.7.1 A question was asked regarding the goals of the Task Group. It was answered that one goal is the publication of a criteria document concerning the health hazards of asbestos, that would be a consensus document, upon which regulations and legislation could be based. It was indicated that a more immediate goal is to assemble the views of the Task Group for the consideration of OSHA when present regulations are revised. It was implied that even if this criteria document had not undergone ASTM approval in time, it could nevertheless serve as a source of consensus views that could be taken into consideration by the regulating agencies. It was anticipated that the OSHA would request comments upon publishing proposed revisions to the existing regulations, and that would be the latest date upon which the input of this Task Group could be submitted. However, it was felt that the earlier our contribution could be made, the more likely it would be to influence the revisions.
- 3.7.2 It was reported that among the proposals for revisions to the definitions received with the letter ballot returns, was an abstract from a booklet entitled 'Fibrous Silicates' by A.A. Hodgson. The Recording Secretary was directed to request a copy for Mr. C. S. Thompson.
- 3.7.3 The proposed warning labels for hazardous naturally-occurring inorganic fibers received from the Editorial Subcommittee, and distributed in an earlier mailing, were discussed. It was decided that these should be covered in the context of work practices and the Recording Secretary was directed to bring this matter to the attention of Messrs. E. M. Fenner and H. H. Kaufman.
- 3.7.4 It was reported that the Recording Secretary had received a copy of 'Characteristics of Amphibole Asbestos Dust Surfaces in Aqueous Media with Reference to Quartz' by N. A. Prasad and F. D. Powley. It was decided that in view of the fact that this paper contains information bearing upon surface charges of amphibole asbestos and characteristics related to the pathogenicity of asbestos as opposed to that of its naturally-occurring precursors, it was decided to accept this communication as reference Document No. 10, attached hereto in Appendix 8.

- 3.7.5 It was mentioned that the supplemental definitions received since the mailing of Document No. 5 entitled "List of Definitions of 'fiber' and of 'asbestos' (Appendix 6 of the minutes of the second meeting)" would be distributed with the minutes of this meeting and would be identified as Document No. 11, Refer to Appendix 9.
- 3.7.6 A letter from Mr. A. A. Hodgson dated 25 January 1974, concerning the Asbestosis Research Council (ARC) was read. Refer to Appendix 10. It was the unanimous opinion of the attendees that the collaboration of the Task Group with the ARC should be as close as possible. It was felt that Mr. Hodgson and Dr. S. Holmes, who are members of both organizations, could act in a liaison capacity to keep both groups informed.
- 3.7.7 It was announced the listings of fibers published by Walter C. McCrone Associates, Inc. had been received by the Recording Secretary. However, it was mentioned that these had not proven useful as a source of additional naturally-occurring inorganic fibers. It was stated that the McCrone listing covers mainly organic, and synthetic inorganic fibers.
- 3.7.8 It was announced that an article entitled 'Talc Dust and Its Toxicity' by G. S. Rajhans, had been submitted. This publication is identified as Document No. 12 in Appendix 11.
- 3.7.9 It was announced that minutes of meetings of the Australian Asbestos Industry Occupational Hygiene Committee (AAIOHC) had been received from Mr. R. A. Bramley-Moore and that copies had been mailed to Messrs T. D. Oulton and G. Gagnon since the information concerns monitoring. These documents were greatly appreciated.
- 3.7.10 It was stated that the reports of the Task Group Representatives who had attended the various subcommittee meetings, last November in Houston, had been mailed but not yet received due to the Canadian postal strike.
- 3.7.11 It was announced that Chairman Winer would not be present at the Main Committee meetings on 23 and 24 April. The Recording Secretary was delegated to present the Task Group report, and to advise the Task Group of any urgent information arising from these meetings. Refer to Appendix 12.

3.8 Date and place of the next meeting.

3.8.1 It was decided that the next meeting of the Task Group on Naturally Occuring Inorganic Fibers would be held at the Chateau Frontenac Hotel in Quebec City, P.Q., Canada, 14 to 16 August 1974.

3.8.2 These arrangements are subject to confirmation, and members will be advised as soon as confirmed.

3.8.3 It was decided that the hotel would be requested to set aside a block of rooms, and the following attendees requested that reservations be made on their behalf:

W. H. Ashton	J. Lepoutre
M. Cossette	R. McCarthy
E. M. Fenner	R. H. Mereness
G. J. Foy	P. V. Pelnar, M.D.
A. M. Harvey	C. S. Thompson
H. H. Kaufman	A. A. Winer

Since several representatives of the Quebec asbestos producers are expected it was decided that at least 16 rooms should be reserved. It was requested that all those who plan to attend, and who are not included in the above list, should advise Mr. J. G. Foy without delay.