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To: W. R. [illegible]
R. E. Rothschild [illegible]

Date: January 25, 1971

From: J. L. Sawyer

SUBJ: Wet Bulk Density Test for Asbestos

cc: R. J. Bragg
K. R. Cranker
J. K. Chapin, Jr./Travelers Rest

During the past several months we have been working on developing a quality control test procedure which will differentiate between the different grades and manufacturers of asbestos fiber used in Mono-Kote. All testing was performed with a 250 ml graduated cylinder (13 inches in height, 1.4 inches I.D.); the cylinder was filled with water to the 125 ml mark, the asbestos was added, and then water was added to the 250 ml mark. A total of 10 complete inversions (360°) of the cylinder was then made and it was allowed to settle for two hours. The variables used in the tests were (1) quantity of asbestos and (2) fluffing procedure for asbestos.

The following is a summary of results which I obtained in the Cambridge laboratory:

Asbestos	Packing	Wt. (grains)	Fluffing (using 2 blades) (of Sears Mixer on Speed # 1)	Settling, percent 1 hr.	2 hrs.
JM-7M02	loose	8	none	93	88
"	loose	8	1 minute	90.5	85.5
"	loose	5	2 minutes	60	52: 61.6; 68
"	pressure	5	2 minutes	52.5	50
"	loose	5	4 minutes	62.8	54.5
"	pressure	5	4 minutes	48.8	47.2
"	loose	5	none	--	59.3
"	pressure	5	none	--	54
National 7RS-2	loose	5	2 minutes	--	66.5; 73.5

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[illegible] inversion, has shown an appreciable difference between JM 7M02 and National 7RS-2: 7M02 settled to 41.5% and 7RS-2 settled to 22.5%. Our testing on the smaller cylinder, which is more convenient for general laboratory quality control, has not revealed a reliable method for differentiation between the asbestos types.

In a test to determine the degree of correlation between laboratories, the same samples of JM 7M02 and National 7RS-2 were evaluated in Cambridge and by W. R. Payment at Travelers Rest. The following shows the correlation when 10 g of non-fluffed asbestos was used in a 250 ml cylinder and allowed to settle for two hours.

	Percent Settling	
	Cambridge	Travelers Rest
JM 7M02	90	95.2
National 7RS-2	88.5	90.4

Since the testing done to date has not revealed a reliable method by which we can determine the acceptability of asbestos fiber for use in Mono-Kote, R. C. Ericson has taken the attitude that, since a reliable test method is not available, we should cease to try developing one because the asbestos raw materials will become absolete in Mono-Kote formulations in the near future anyway. Before doing this, however, we would appreciate your comments and ideas on this subject.

J. L. Sawyer

JLS/bhb