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Mr. A. High

December 20, 1966

O. W. Praifer

Mr. R. E. Langlois

Mr. R. J. McEvoy

Mr. R. F. Shannon

COTTON FIBER AS A
REINFORCEMENT IN KAYLO

You are aware of the urgency motive in the substitution of cotton for asbestos fibers in Kaylo, from a health viewpoint. There is also the advantage of impact strength improvement accompanying its use. If it is possible to secure the cotton fibers for less than ten cents per pound, an economic advantage can be had in raw material cost as well.

However, all cotton fibers may not survive alkali attack from the line, nor the 600° F temperature of the autoclave. To date the limited trial tests we have made with twisted cotton threads have had a survival record when submerged in the Kaylo slurry. The exposed portion has burned away.

We must also determine, from the various grades of cotton fiber used in experimental specimens, the temperature at which sintering begins and when completely burned away, when such cotton fiber containing insulation is placed on a high temperature processing or steam line and whether or not this result is accompanied by any odor, fumes or smoke.

We need all grades, from linters through a heavy twisted thread, to test for survival rates, times, at various pipe temperatures, as well as from Processing results through the SID cylinder.

We hope to find some grade of cotton fibers economically comparable with asbestos, which can be substituted in whole or in part for amosite or chrysotile asbestos. The amosite fiber presently used is for strength purposes, at the cost per pound of the grade in service. The strength of the end product, breakage in application or transit can be improved at a higher cost by a longer amosite fiber. Correspondingly, the impact strength is reduced when a shorter length amosite, at a lower cost, is placed in the Kaylo batch.

The chrysotile fiber is of shorter length than the amosite and is a softer asbestos with less strength imparting characteristics. Its main purpose is for suspension of the raw materials when in a slurry form to eliminate water separation during standing and through the first reaction stages of preheating and induration.

We can further discuss verbally any other information you may desire or need. We will appreciate your help in procurement of cotton fibers.

December 20, 1966

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Mr. A. High

We have tried inclusion of the present Fiberglas textile yarn, thread, sliver, etc. and find without some type of coating, phenolic, rubber, vinyl, etc., the glass fibers are demolished by line and temperature attack. There was an economic penalty attached to the material we used over asbestos fibers. However, you may have access to more information along these lines than we had and, therefore, do not think we should dismiss the potential use of glass fibers in this experimental project even if past experience has not been favorable.

O. W. Pfeiffer

OWP/ris