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KAISER GYPSUM COMPANY, INC.

INTER-OFFICE MEMORANDUM

TO G. B. Kirk
AT Oakland

DATE March 1, 1974

COPIES TO J. W. Blewett (via GBK)
T. W. Smith
H. L. Weightman
A. F. Raffaelli

FROM J. S. Sheahan
AT Antioch R & D

SUBJECT DUST FROM JOINT COMPOUND JOB OPERATIONS PL 4.1.0 00022

We have received a group of three reports from the Gypsum Association covering amounts of asbestos and siliceous dusts generated during mixing and sanding of joint compounds on typical jobs.

The overall summary by the testing agency states, "There was evidence of exposure of workers to airborne concentrations of asbestos and both total and respirable siliceous dust in excess of acceptable limits as established by OSHA. Because of the high concentrations of total dust generated during the mixing and sanding activities, it is clear that control of the total dust problem would provide an inherent control of the associated asbestos and silica problems as well."

The first report deals with dry and premix products from the other five major gypsum companies, with KGC materials not included. The dust samples collected were so heavy that reliable tests for asbestos could not be made, and only siliceous dust values are reported.

The second report covers a recheck using dry and premix products from two of the above companies on siliceous dust values.

The third report covers asbestos dust from the products used for the second report.

A summary of the test data is attached. Also attached is a summary of our own tests on our own products.

ACTION REQUIRED:

1) Review and recommendation as to whether asbestos warning labels may legitimately be removed from our premix products. The law states that "no label is required where asbestos fibers have been modified by a bonding agent, coating, binder or other material so that during any reasonably foreseeable use, no airborne concentrations of asbestos fibers in excess of the prescribed exposure limits will be released." Our company is the only major company carrying the asbestos warning on its premix and it is costing us business.

2) Recommendation as to company's position on what is next step to be taken by the Gypsum Association Study Committee on this project. That committee is already on record in favor of placing the asbestos warning and a dust warning on all bags and pails of joint compound.

JSS/sc
Attachment

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SUMMARY OF GYPSUM ASSOCIATION REPORTS

FIRST REPORT

September 1973 tests - Siliceous Dusts (asbestos dust data not reliable)

Mixing of 5 dry powder joint compounds

	8 hr TWA OSHA Limit **
Worker exposure (breathing zone):	
Total dust - 8.9 to 21.6 mg/cu m	*
Respirable dust - 1.3 to 9.1 mg/cu m	*
General area exposure:	
Total dust - 10.8 to 34.0 mg/cu m	3.1 to 9.7
Respirable dust - 0.8 to 2.6 mg/cu m	*

Sanding of joints from 5 dry powders and 5 premixes

Worker exposure (breathing zone):	
Total dust - 72.5 to 244.4 mg/cu m	2.4 to 15.0
Respirable dust - 1.5 to 5.6 mg/cu m	*
General area exposure:	
Total dust - 27.7 to 136.7 mg/cu m	4.0 to 15.0
Respirable dust - 4.4 to 23.0 mg/cu m	0.7 to 5.0

* not calculable because samples too small to analyze for free silica content needed for the calculation. Respirable dusts are specific size fractions of the total dust.

** The OSHA limit amounts vary because they are dependent on the amount of silica present.

NOTES:

1) There was no significant difference among dust levels generated by sanding joints which used dry powder compounds versus those which used premix compounds.
2) No one manufacturer's product was significantly closer to complying with OSHA limits than were the others.
3) It is said that the individual worker is unlikely to have more than 2 hrs. direct exposure to mixing or sanding each workday.

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SUMMARY OF GYPSUM ASSOCIATION REPORTS

SECOND REPORT

November 1973 tests - Siliceous Dusts

	8 hr TWA OSHA Limit **
Mixing of two dry powder joint compounds	
Worker exposure (breathing zone):	
Total dust - 11.7 and 33.8 mg/cu m	*
Respirable dust - <8.5 and 6.9 mg/cu m	*
General area exposure:	
Total dust - 121.6 and 98.3 mg/cu m	6.7 and 5.4
Respirable dust - 13.8 and 12.2 mg/cu m	1.3 and *
Sanding of joints from 2 dry powders	
Worker exposure (breathing zone):	
Total dust - 109.5 and 196.3 mg/cu m	8.8 and 5.0
Respirable dust - 3.3 and 2.0 mg/cu m	*
General area exposure:	
Total dust - 96.4 and 76.5 mg/cu m	8.3 and 4.0
Respirable dust - 14.6 and 7.6 mg/cu m	3.3 and 1.9
Sanding of joints from 2 premixes	
Worker exposure (breathing zone):	
Total dust - 69.2 and 87.3 mg/cu m	9.4 and 10.0
Respirable dust - 3.9 and 6.4 mg/cu m	*
General area exposure:	
Total dust - 54.9 and 91.3 mg/cu m	5.6 and 1.5
Respirable dust - 4.9 and 7.9	* and 3.1

* Not calculable because samples too small to analyze for free silica content needed for the calculation.

** The OSHA limit amounts vary because they are dependent on the amount of silica present.

NOTE: 1) It is said that the individual worker is unlikely to have more than 2 hrs. direct exposure to mixing or sanding each workday.

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SUMMARY OF GYPSUM ASSOCIATION REPORTS

THIRD REPORT

November 1973 tests - Asbestos Dust (fibers longer than 5 micrometers)

OSHA Standard - continuous exposure	5 fibers/cc
OSHA Standard - peak exposure	10 fibers/cc

Worker exposure (breathing zone):

Mixing:	1st dry compound		31.4 fibers/cc
	2nd dry compound		7.6 fibers/cc
Sanding:		10 min. samples	30 min. samples
		avg	aliquoted & redeposited
	1st dry compound	---	39.4 fibers/cc
	2nd dry compound	4.4 fibers/cc	14.8
	1st premix	4.2	11.1
	2nd premix	10.8	9.7

6 of 13 sanding tests (10 min. samples) indicated concentrations in excess of 5 fibers.

2 of 13 sanding tests (10 min. samples) indicated concentrations in excess of 10 fibers.

NOTE:

1) It is said that the individual worker is unlikely to have more than 2 hrs. direct exposure to mixing or sanding each workday.

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RESULTS OF TEST WITH KCC COMPOUNDS BY UNION CARBIDE

Asbestos Dust (fibers longer than 5 micrometers)

Worker exposure (breathing zone):	fibers/cc
Mixing joint compound with drill mixer	54.6
Mixing finishing compound with potato masher	66.5
Sanding joint done with Premix Topping	4.3
Sanding joint done with Premix Dual Purpose	1.1
Sanding joint done with Finishing Compound	2.8

NOTE:

Since in no case the sampling time was longer than 2 minutes, these data should be used only as general guides to indicate gross relative differences.