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PHK 2615
20th May, 1969.

Airborne Asbestos Dust Survey at John Taylor Dunford Ltd, Newcastle-Upon-Tyne

The results of the membrane filter samples, collected on 6th May, 1969, at the above factory are tabulated below:-

Sample	Process	Dust Conc. (f/cc)
1. Marking-out and cutting cloth.	20" x 10" pieces of KP400 were cut with hand scissors on a large table.	1.1
2. Unrolling cloth.	Roll of KP 417 taken from stock (corner of room) and unrolled ready for cutting.	2.6
3. Machine Sewing.	Sewing KP400 cloth into mattress bags, using oil lubricated thread - YPM/63.	1.2
4. Turning mattress bags.	The bags sewn in the above sample were turned inside-out and the edges "squared-off".	3.0
6. Filling mattress with chrysotile fibre.	Mattress bags filled with dry FR330 fibre. This involved 'opening' fibre out by hand, stuffing fibre into bag and finally patting the mattress flat. Ventilated canopies over work benches.	4.0
7. Filling mattress with chrysotile fibre.	Mattress bags filled with dry FR330 fibre. This involved 'opening' fibre out by hand, stuffing fibre into bag and finally patting the mattress flat. Ventilated canopies over work benches.	2.5
8. Sewing up filled mattresses.	Open ends of mattresses hand-sewn. (a) whilst others still being filled (i.e. results affected)	4.8
9. Sewing up filled mattresses.	(b) Approximately 10 minutes after filling (ie. little residual dust)	1.8
10. Sweeping.	Long handle brush used to sweep unused fibre off bench and spilled fibre up off the floor. The latter was rather difficult as floor was still wet after damping-off. Respirators worn throughout this work.	5.8

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Sample	Process	Dust Conc. (f/cc)
11. Hand sewing filled mattresses.	Diagonals drawn on mattresses and sides sewn together ready to take metal hooks. Mattresses patted regularly.	12
3. Pushing rods into completed mattresses.	Long metal rods pushed into diesel engine silencer mattresses.	2.2
12. General Atmosphere.	"Background" dust level in vicinity of sewing and rod pushing processes covered by samples 3, 5 and 11.	3.1

NOTE : All samples taken by means of "Dracger" hand-pump on untreated cloths.

These results indicated that the work carried out at this factory produces little dust until the loose asbestos fibre is used. Counts are less than 4 f/cc. and the introduction of dust suppressed cloth would probably reduce them to less than the 2 f/cc. TLV. However, where the fibre is stuffed into the mattresses, the airborne dust is excessive, the levels being significantly above 12 f/cc. The ventilated canopies are positioned too high above the bench and the air velocity is too low (partly because of insufficient filter sleeve shaking) for efficient dust extraction. However, John Taylor Dunford Ltd. are considering the change over from asbestos to mineral wool filling and therefore the dust problem may be removed, assuming there is no health hazard associated with the latter. Several of the later processes also produced relatively high dust levels and one of the causes is considered to be the patting employed to consolidate the filled mattresses. The dust count of 12 f/cc. for the work covered by Sample 11 was almost certainly due to this, but also helping to concentrate the dust at this location is the inadequate room ventilation. The air movement is induced by two input and one larger output wall fans and it seems likely that the corner of the room is bypassed, leaving a stagnant volume of air where this work is carried out.

The building is very old and delapidated and not at all conductive to good dust control measures. None are therefore recommended, especially as the Company are to move to new premises. Interim measures however, should be the use of portable vacuum equipment for cleaning purposes and collecting spilled fibre, which could be prevented if the edges of the fibre filling benches were built up. If these were built up sufficiently and the other three sides of the filling benches were enclosed, the dust extraction would be improved. A false ceiling has been constructed and the roof supports boxed in in the main workroom. This is good practice and should therefore be again considered when the Company moves.

The general conclusions of the survey is that if the cloth was dust suppressed, coupled with the use of an alternative filler, the dust levels would probably be reduced to less than 2 f/cc. It is therefore recommended that treated cloth be introduced at this factory as soon as possible.

J Harness

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