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Dust Conditions in Plant

DIVISION OF SAFETY AND HYGIENE
INDUSTRIAL COMMISSION OF OHIO

April 8, 1949

Mr. James H. Flinker,
Superintendent,
Division of Safety and
Hygiene,
Building.

Goodyear Tire and Rubber Co.,
Re: Akron, Ohio

SURVEY OF DUST CONDITIONS IN PLANT

1. On April 5, a visit was made to Plant #2 of the above named company to check conditions under which employees work.
2. Contact was made with Jack Kidney, Safety Director, Robert Pickens, Assistant Safety Director, and Robert Smith, Student Engineer.
3. Company manufactures tires.
4. As this is the second of a series of surveys to be made in this firm's plants, no recommendations will be given until the survey has been completed.
5. Three dust counts were taken at the time of this visit. They are as follows:

(a) BANBURY MIXER - FEEDER AREA

Two banbury mixers are located on the floor below, with their feed opening extending through the floor to the point where the count was taken. Three men work in a group at each machine. One man feeds the machine at regular intervals, while the other two men act as helpers.

The rubber and other components are left in the machine for approximately 2½ minutes. The machine operator and one helper weighs the rubber. The second helper weighs the compound ingredients. Approximately 350 pounds of rubber and 12 pounds of compound compose a batch.

The midget impinger was set at the breathing level of the man who was weighing the compound ingredients, and about 2 feet behind him. It was about 3 feet from one of the two men who weigh the sheet rubber. A sample was taken for 5 minutes and contained 35 million particles of dust per cubic foot of air. Most of the dust would be talc which emanates from the sheet rubber at the time when it is tossed on the scales. Two batches were weighed during the period of sampling.

(b) MACHINE DUSTING AREA

At the time of the writer's visit to Plant #1 on February 15, he took a dust count at the tire dusting area. This is described in paragraph #6 of a report submitted February 18. The count at that location was 29.6 million particles of dust per cubic foot of air.

In plant #2, the dusting is done in a machine. The tires pass through on a chain conveyor. The talc or soap-stone is blown through slotted nozzles onto the tires. The excess talc falls into hoppers and is collected. The dust which is not heavy enough to settle is collected in a Pangborn collector, and is then exhausted out of the building. There is a second fan which exhausts the entrance and exit to the machine. There was an air suction into both ends of the machine. There would be very little dust produced by this operation.

The sample was taken to make a comparison between the operations in Plants #1 and #2. The impinger was set up in the aisleway near the dusting machine at breathing level. It was about 10 feet from

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the inlet end of the machine and about 3 feet from the passageway along which there is considerable traffic. The sample contained 5 million particles of dust per cubic foot of air. It is the writer's opinion that a good portion of this dust was the general dustiness of the room.

There was evidence that faulty maintenance caused some of the talc to escape from the machine. This was shown by a quantity on the floor. The machine operator sweeps the area several times during his 6 hour working period.

(c) NORTH BAGGING MACHINE

Tire casings and liner bags are brought to this area on conveyors. The casing has not been formed to the tire shape. The liner bag is forced into a center section of the machine, while the casing which is in the form of a cylinder is placed between the two heads of a press. As the upper head of the press lowers, the bag is pushed out of the recess so that it fills the space inside of a tire, thus producing a normal tire shape with a pre-specified filler inside.

The dust produced in this area comes from the outside of the casing as it is being handled. The operator of the machine first feeds the bag into the recess opening, then he picks up the casing and sets it on the lower head of the press. He then causes the upper head of the press to descend. After the tire is formed, the second man of the crew takes the tire from the press and places it on a conveyor ready to be moved to the curing chambers.

The widget impinger was set up at the breathing level of the press operator, and about 2 feet from his nostrils. The sample taken contained 10 million particles of dust per cubic foot of air. As previously stated, this dust could be talc or soap-stone which would come off of the casing as it was being handled. Location of the machine was about 100 feet from the coating machine described in the previous paragraph. It is believed that part of the dust which was found in the area near the coating machine, emanated in the area of the bagging machine.

6. Comments and recommendations will be reserved as previously stated.

Respectfully submitted,

Lester W. Merritt
Safety Advisor

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