or on the window sill in front of him, you will usually find a varied collection of relics. He will usually wet down his sand pile, but seldom his floor or gangway. When he is through with his shift he usually grabs the air hose and proceeds to take a compressed air bath.

And we have the *foundry laborer*: he has many menial tasks to perform. When he sweeps or uses a shovel he seems to be of the opinion that his efforts are judged by the atmosphere he creates. If he does sprinkle the floor it is usually done very sparingly.

Shake-out men and crane men seemingly give little attention to the results of their thoughtlessness. Grab buckets are usually lifted to the limit of their lift and then dumped. Many companies have furnished equipment, such as positive pressure helmets and respirators, to employees who work in extremely dusty atmospheres. But it is surprising to note the apparent lack of interest on the part of the employee for whose protection this equipment is furnished.

From these remarks some may say "Why shift the responsibility?" Not a bit. We have merely cited these few facts as an indication that *possibly* we can improve the supervision. If we make every man responsible for the cleanliness in the vicinity in which he works, and every foreman responsible for his department, and then in turn make the superintendent answer for the cleanliness of his shop, we will not have to worry about the increase in labor cost. After dust gets into the atmosphere, *it is, of course, very difficult and expensive to remove.* Keeping the foundry floor off the ceiling is a man-size job.

Ventilation is a problem everywhere. A diligent survey of our existing equipment may develop the fact that by small expenditures we can improve conditions. Inspect your dust-arresting equipment. See that the rapping device is in order, that the screens are in good condition, we suggest that they are rapped and the hoppers emptied regularly. Repair any leaks in pipes. See that the valves close properly. Chutes should be kept in good repair and when emptying arrestors, respirators should be worn by the men whose duty it is to perform this work. If refuse from the arrestors is not removed at once, keep it in containers or wet down until it is removed. Above all, watch your air velocities and make sure you are removing at the source as much of the dust as the equipment was originally designed to do. You pay for the current the motor consumes to operate your suction equipment, therefore get the proper return for that expenditure.

Do not store or allow sand to accumulate around your blasting equipment. Make sure you are receiving the proper air changes in your sandblast rooms. Inspect your masks to the amount of air purging through. The wearer is prone many times to just crack or partially open the valve, and when this is done he is not getting the full protection for which the helmet was designed. We suggest that the helmet be removed from the sandblast room and stored at the end of the day in a dust-tight cabinet, instructing the wearer to clean before re-using.

In your cleaning rooms where tumbling barrels are used, we deal again with air velocities. Piping should be diligently inspected and kept in good repair. Make sure traps are performing the service they were designed for. It might be well to keep floors in this department wet down. Remove the day's accumulation of refuse at the end of the day's run. When cyclones are used, make sure you are not exhausting at the level of windows which may be opened in other parts of your plant.

We will have to look for further co-operation from the foundry equipment manufacturers who serve our industry. Equipment will have to be sold to us not to meet existing codes, but as dust-tight as human ingenuity can design them. After the equipment is installed, it will be the purchaser's responsibility to see that it is regularly inspected and maintained to perform the service for which it was originally designed.

And we refer again to the employee's responsibility. When he elects to work in a foundry, he should be willing to co-operate and wear the safety devices which are provided by his employer, and it will be the purchaser's responsibility to see that the equipment is well cared for and properly maintained.

Our industry is a basic one and we hope that it will long continue to be essential. For this reason we want to assure those who are sitting on the side lines that it is our determination and hope that, with the help of those in the medical profession who have given so generously of their time in scientific study, we can soon determine the actual extent of the hazard.

In the meantime, while many diverse opinions are being brought into agreement, it is imperative that we give more than passive assent to suggested measures of precaution or improvement. The accomplishment of worth while results depends upon the diligent and active co-operation of everyone concerned and the utilization of all known means of prevention and control. Only through united effort can we hope to accomplish an effective program which will give maximum of advantage to employers and employees alike, and to such an end we are confident the foundry industry will continue to dedicate its earnest and conscientious efforts.

How to Determine the Dust Content of the Atmosphere in Dusty Industries

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The importance of atmospheric dust as an agent in the causation of respiratory disease has long been known. However, it is only within the last few years that this subject has achieved medical and legal importance in dusty industries. Because of the extension of compensation laws to include occupational diseases, and through an ever-increasing number of legal suits against industrial concerns by employees claiming disability due to dust inhalation, there is need for a severe attack on the problem of eliminating or otherwise combating the dust hazard. In order to intelligently control the dustiness of the air, the amount of dust present must be determined. With a given dust, two factors are usually considered: (1) the number of dust particles in a given quantity of air, which is usually expressed in millions of particles per cubic foot of air; (2) particle-size, usually expressed in a size frequency distribution curve, that is the percentage less than stated size is plotted against the size of particles.

Instruments Used for Determining Atmospheric Dusts

Many instruments have been devised for determining the dust concentration in air and it may be well to give a brief historical review of this subject. The South African investigators began using the sugar tube method for the sampling of atmospheric dust in 1911: the same method was used by the U. S. Bureau of Mines as early as 1914. By this method a measured volume of the dust air is passed through