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GENERAL ELECTRIC COMPANY

GENERAL OFFICE
SCHENECTADY, N. Y.

1 River Road
SCHENECTADY, N. Y.

NATIONAL SAFETY COUNCIL
SAND BLAST

Jan. 31, 1933

Dr. C. E. A. Winslow,
Yale Medical School
New Haven, Conn.

Dear Dr. Winslow:

Confirming conversation last week in New York on the subject of the National Safety Council publicity on Abrasive Pressure Cleaning, I believe the introductory paragraph or paragraphs should take cognizance of the fact that several kinds of abrasive grit are absolutely necessary, depending on the material being cleaned and the finish required. I gained the impression in reading the original report of Dr. Greenburg's Committee that there seemed to be an underlying thought that steel grit or steel shot could be used exclusively.

Steel abrasive is in two forms- a "grit", which under the microscope shows rough edges, and "shot", which is in little rounded pellets similar to ordinary lead shot. All abrasive pressure cleaning media are reclaimed and used over again, and grit after going thru the machine a few times becomes more like shot as the rough edges get hammered down.

The effect of sand on a surface is a slight cutting - leaving a rougher surface (microscopic view) than does the steel which hammers or peens the surface. In the cleaning of aluminum and alloy castings, sand is much to be preferred as it gives a better finish to the eye (microscope not needed to determine this) and in the case of aluminum it takes two to three times as long to clean a casting with steel as it does with sand, making the cost far more economical with sand abrasive as well as giving a so-called satin finish.

Surfaces to which paint or enamels, particularly the latter, are to be applied will hold the paint better if sand is used for cleaning, owing to the aforementioned rough surface as contrasted with the peened surface given by steel shot cleaning.

Discolored surfaces some times appear on castings. This discoloration is readily removed with sand and on the contrary steel merely hammers it down and does not remove it.

 GENERAL ELECTRIC COMPANY

I have elaborated on the mechanical effects somewhat more than you probably would do in the publication, in order to give you a fairly complete picture of the needs for different abrasives, and for that matter, I was once told by a former Engineer of the American Abrasive Metals Company that they had found for certain finishes that powdered carborundum was used by them in part, and on a personal visit some years ago to a Silverware factory, I noticed that they were putting a finish on a silver cup by the use of sandblast with a white sand. Whether that was marble or something else I did not inquire, as at that time I was not particularly interested. I think possibly a little inquiry might disclose several other abrasives absolutely necessary for special finishes.

The article could then continue with description of recommended protective devices which are not mentioned in detail as I believe those are already understood.

The section of the original report also recent effusion of the headquarters staff touches very lightly on housekeeping. The report made some mention about housekeeping being kept in good condition, and the latest had a few remarks about vacuum cleaning in place of brooms in foundry cleaning rooms. I doubt very much if any foundrymen would go to the expense of putting in any vacuum cleaning for foundry floors. I would suggest that the housekeeping portion include a definite recommendation for oiling floors in foundry cleaning rooms as we have found that the dust in the cleaning rooms can be reduced materially by such oiling. We use the regular fuel oil which we have in the plant. Floors are oiled every three or four months, and it is estimated that one gallon of oil will cover about 100 square feet (it may take more oil on first application). This is put on with an ordinary hand watering pot and is done on dirt floors, as we have had no occasion to put it on concrete.

In regard to this oiling of foundry floors, this is done only in the Cleaning Department. It is not done in the molding area where sand which is used in molding might come in contact with it, as it would prove detrimental to good molding practice. In addition to the sprinkling of floors within the shop, we had all of the yard area immediately surrounding the foundry sprinkled by a concern who has a tank sprinkler, so that on windy days we have a reasonably clear atmosphere about the foundries contrasted with an exceptionally dirty condition prior to the oiling.

It has been our experience that it is very profitable to frequently and carefully check all exhaust systems in connection with blast operations to make sure there are no leaks in exhaust lines and that the suction pipes are tight, By means of a regular mercury U-gauge one can determine very promptly the efficiency of the system.

I would be very glad to look over a draft of the article that you have in course of preparation, and would suggest that a copy might also be referred to the following members of the Executive Committee who I am reasonably sure have these conditions to contend with:

C. B. Auel, Westinghouse Elec. & Mfg. Co., East Pittsburgh, Pa.

C. W. Bergquist, Western Electric Company, Hawthorne Station, Chicago, Ill. (write Mar. 15)

J. E. Culliney, Bethlehem Steel Corp., Bethlehem, Pa.

Harry Guilbert, Pullman Company, 701 East 114th Street, Roseland Station, Chicago, Ill.

Frank J. Lanahan, Fort Pitt Malleable Iron Co., Pittsburgh, Pa.

Yours very truly

GESanford:ST