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JUN 06 1958

OFFICE COPY Biochemical Research Laboratory
The Dow Chemical Company

RESURVEY OF BENCH HOOD, BUILDING
PRODUCTS SECTION, COATINGS TECHNICAL
SERVICE, 433 BUILDING

File: T2.1-1-65³²(e)
Chg.: 1219
Date: 4-18-58
By: J. E. Peterson

Signed

J. E. Peterson

Checked

E. J. Schmidt

Date

4/22/58

Date

4/23/58

PLAINTIFF'S EXHIBIT

DOW-1040

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PROBLEM

The bench hood in the Building Products Section of Coatings Technical Service, 433 Building was surveyed on 1-15-58 (See report, File No. T2.1-1-65, dated 1-22-58) and found to be inadequate. Investigation disclosed that the hood fan had been installed so that it ran backwards. This was corrected and a resurvey of the hood was requested.

CONCLUSIONS

The average face velocity found for this hood on 4-11-58 was 66 fpm with the door wide open, as compared with a recommended velocity of 80 fpm. A face velocity of 80 fpm or more would be assured if a stop were installed so that the hood sash could not be opened more than 25 inches. This procedure is recommended.

ST00000026

PRESENTATION OF DATA

On 4-11-58 the bench hood in the Building Products Section of Coatings Technical Service, 433 Building was resurveyed. Results of this survey are presented on the "Hood Survey Data Sheet" included with this report. The figures shown on the sketches of the hood face are air velocities in lineal feet per minute (fpm). The mean face velocity with the sash wide open was found to be about 66 fpm.

After considering the toxicity and inhalation hazard of materials handled within the hood, the sources of external and internal air disturbance at the face of the hood, the size of the hood, and the variance of face velocity data, the recommended face velocity was calculated to be 80 fpm. At an average volumetric air flow rate of 920 cubic feet per minute (cfm), the sash opening to produce a face velocity of 80 fpm was calculated to be 25 inches.

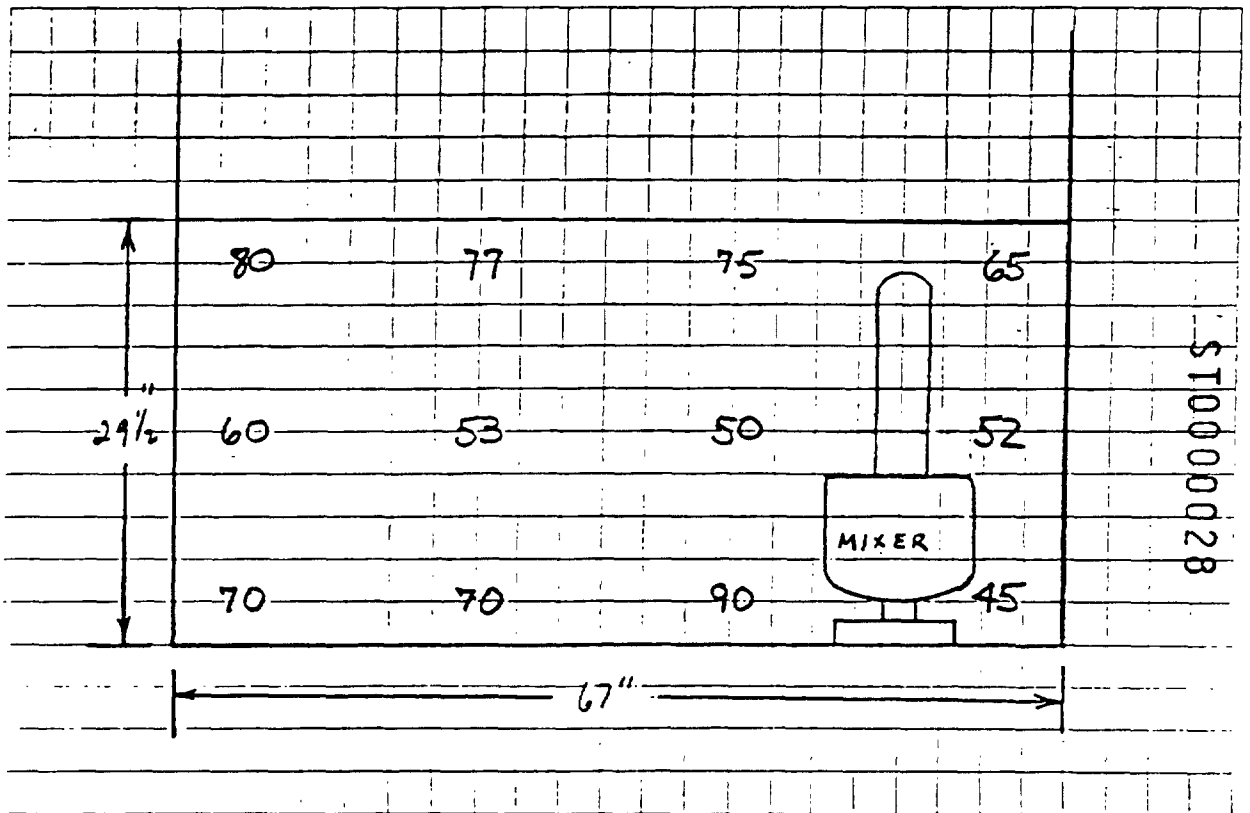
According to users of the hood, the sash is rarely raised all the way, and therefore, if a stop were installed so that the sash could be raised no more than 25 inches, the hood should be satisfactory in all respects for present uses.

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HOOD SURVEY DATA

FILE NUMBER <u>T21-1-32</u>	BUILDING NUMBER <u>422</u>	DATE <u>4/11/58</u>	TYPE OF HOOD <u>LAB BENCH</u>
HOOD LOCATION, DESIGNATION <u>BUILDING PRODUCTS LABORATORY, CTS</u>			
INTERNAL BAPPLE? <u>YES</u>	EXTERNAL BAPPLE? <u>NO</u>	CHEMICALS HANDLED IN THIS HOOD <u>ASBESTOS, PVC, PLASTICIZERS, ETC; SOLVENTS</u>	
OTHER HOODS CONNECTED TO THE SAME EXHAUST SYSTEM <u>5 OVENS</u>			
SOURCES OF AIR DISTURBANCE EXTERNAL TO THIS HOOD <u>AIR DIFFUSER INLET ABOUT 8 FEET FROM FRONT OF HOOD.</u>			
REMARKS <u>MINIMAL TO NO TRAFFIC</u>			

RECOMMENDED MEAN FACE VELOCITY FOR THIS HOOD 80 F.P.M., DOOR OPEN 29 1/2 IN.
 RECOMMENDED EXHAUST RATE FOR THIS HOOD 1100 C.F.M.



HOOD CONDITIONS DURING THE SURVEY

	MAXIMUM	MINIMUM	MEAN	VARIANCE (S ²)
ACTUAL FACE VELOCITIES	<u>90</u> F.P.M.	<u>45</u> F.P.M.	<u>45.6</u> F.P.M.	<u>191</u>
HOOD FACE AREA DURING SURVEY	<u>13.7</u> SQ. FT.			
EXHAUST RATE DURING SURVEY	<u>898</u> C.F.M.			
MAXIMUM OPENING: HEIGHT <u>29 1/2</u> IN., WIDTH <u>67</u> IN. MAXIMUM HOOD FACE AREA <u>13.7</u> SQ. FT.				

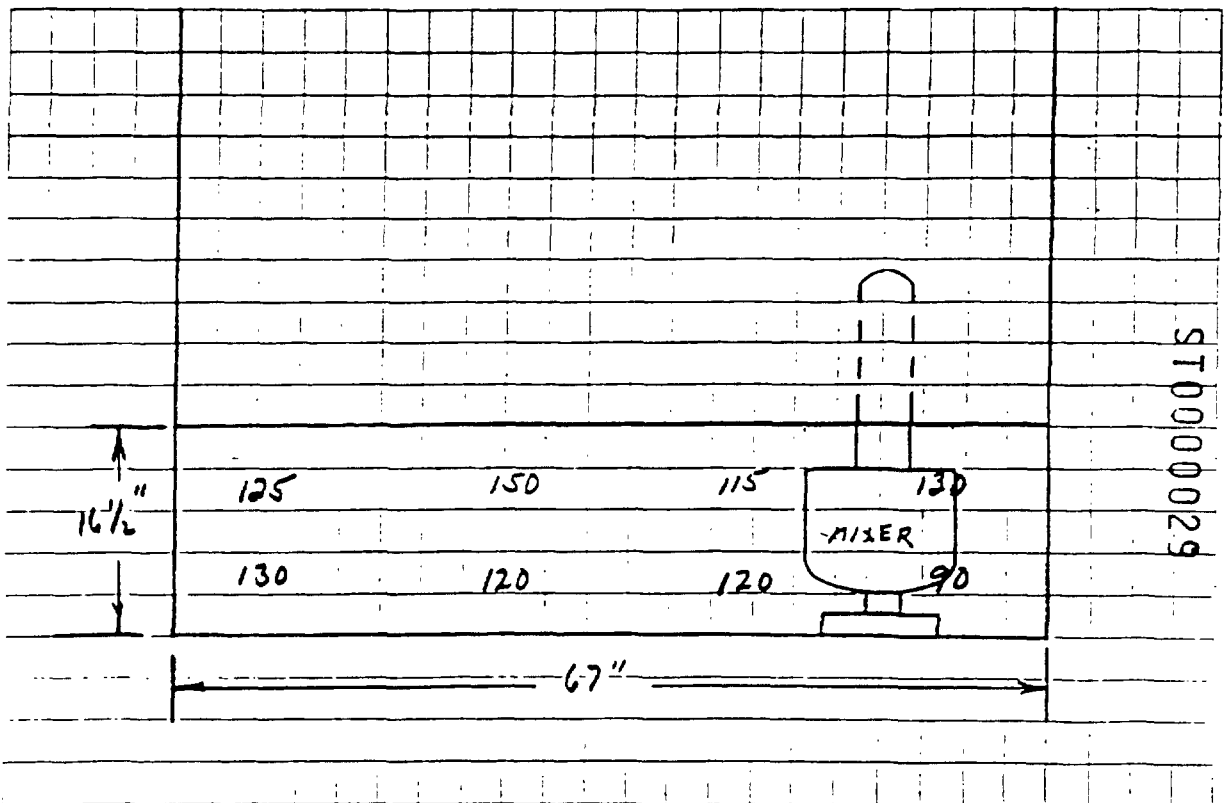
INSTRUMENT USED FOR AIR VELOCITY MEASUREMENTS <u>ANEMOTHERM AIR METER</u>	SERIAL NUMBER <u>5259</u>	SURVEYOR <u>J.E.P.</u>
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HOOD SURVEY DATA

FILE NUMBER <u>T2-1-32</u>	BUILDING NUMBER <u>422</u>	DATE <u>4/11/57</u>	TYPE OF HOOD <u>LAB BENCH</u>
HOOD LOCATION, DESIGNATION <u>BUILDING PRODUCTS LABORATORY, CTS</u>			
INTERNAL BAPPLE?	EXTERNAL BAPPLE?	CHEMICALS HANDLED IN THIS HOOD	
OTHER HOODS CONNECTED TO THE SAME EXHAUST SYSTEM			
SOURCES OF AIR DISTURBANCE EXTERNAL TO THIS HOOD			
REMARKS <u>"NORMAL OPENING"</u>			

RECOMMENDED MEAN FACE VELOCITY FOR THIS HOOD _____ F. P. M., DOOR OPEN _____ IN.

RECOMMENDED EXHAUST RATE FOR THIS HOOD _____ C. F. M.



HOOD CONDITIONS DURING THE SURVEY

	MAXIMUM	MINIMUM	MEAN	VARIANCE (s ²)
ACTUAL FACE VELOCITIES	<u>150</u> F.P.M.	<u>90</u> F.P.M.	<u>122.5</u> F.P.M.	<u>286</u>
HOOD FACE AREA DURING SURVEY	<u>2.68</u> SQ. FT.			
EXHAUST RATE DURING SURVEY	<u>941</u> C.F.M.			
MAXIMUM OPENING: HEIGHT <u>29 1/2</u> IN., WIDTH <u>67</u> IN. MAXIMUM HOOD FACE AREA <u>13.7</u> SQ. FT.				

INSTRUMENT USED FOR AIR VELOCITY MEASUREMENTS <u>ANEMOTHERM AIR METER</u>	SERIAL NUMBER <u>5259</u>	SURVEYOR <u>J. E. P.</u>
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I am an author of and have read this report comprising 3
pages with 2 pages of drawings, photographs, graphs, and
checked the data herein against the original entries under Biochemical
Laboratory File Number T2.1-1-65

Signature J. E. Peterson Date 4/25/58

Signature _____ Date _____

I finished typing this report on 4-22-58
comprising 3 pages and placed therewith 2 pages of
drawings, photographs, graphs from an original draft given me by _____
J. E. Peterson on 4-18-58.

I have placed in the plant mail 4 copies of this report for
transmittal to Please refer to the distribution list of this report.

Signature Gladia Klosterman Date 4-25-58

ST00000030

UNIT INDEX

The bench hood in the Building Products Section of Coatings Technical Service, 433 Building was resurveyed. The average face velocity found was slightly less than that recommended, but this inadequacy could be easily corrected by installing a stop so that the hood sash could be opened no more than 25 inches.

DISTRIBUTION

R. B. Drubel, Coatings Technical Service, 433 Building
N. R. Peterson, Coatings Technical Service, 433 Building
H. H. Gay, M.D., Medical Department, 607 Building
W. L. Tisdale, Safety Department, 401 Building

gk

ST0000031

Subject To
PROTECTIVE ORDER

ST0000025
