ABSTRACT

PT. Petrokimia Gresik is a company engaged in the fertilizer industry, chemicals, and other services such as construction and engineering. One of the fertilizer production Fertilizer Aluminium fluoride is located on the Storage ALF\textsubscript{3}. Ventilation in the unit are not able to minimize the dust generated by the engine and Hopper, Product Packing, so the fertilizer dust residing in these units often interfere with the workers. Based on the results of that inspection has been conducted in May 2009 showed dust exposure on Storage ALF\textsubscript{3} is = 29.45 mg/m\textsuperscript{3}. Where based on SNI 19-0232-2005 and SE 01/MEN/1997 amount exceeds the the maximum limits threshold is equal to 10 mg/m\textsuperscript{3}.

In order for dust exposure in ALF Storage\textsubscript{3} can be controlled, it is necessary to design Dust Collection System. By using ASRHAE then to design this Dust Collection System includes the design as a suction cleaner Hood, Duct design pipe as distributor of dust, and calculation of power on the blower.

The calculation resulting Hood on Packing Product design and Hopper is \( V_{\text{design}} \) is 50 fpm. Duct diameter is equal to the input of 0.087 m and diameter of the output is valued at 0.374 m. With great power blower 21.0613 KW. The dimensions of the Filter Bag is obtained for an area of 2.35 m\textsuperscript{2} was found 98 bags of diameter 0.0762 m. The height of 2.262 m bag filter bag filter and a high of 2.3636 m. While Hooper is equal to a high of 0.9 m and a diameter hopper of 0.374 m.

**Keywords:** Dust Collection System, Hood, Duct, Bag Filter, Blower