DESIGN OF AXIAL SUBMERSIBLE PUMP
(Case study of flood control installation Mulyosari Surabaya)

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Abstract

Flooding is a problem that every year hit the city of Surabaya. Flooding that occurred due to lack of water catchment areas, poor drainage, siltation of drainage channels due to the habit of throwing garbage in the river communities. Flooding that occurred in the area due to elevation heights Mulyosari Surabaya drainage channel at the same residential area with rivers, so rainwater can not flow by gravity toward the creek. To overcome these problems so that the flow pump is built within the drainage channel can be accelerated in the waste into a river.

The basis of design capacity submersible axial pump is the magnitude of the maximum intensity of rainfall and the area to be drained on Mulyosari area of Surabaya. Having obtained the capacity of the pump, then set head, power pump and motor rotation. Then do the design of the pump impeller by the method of calculation of airfoils and other pump parts such as inlet guide vane, shafts, bearings, and keys.

From the results obtained design conducted a submersible axial pump design with a capacity of 5 m^3 / s, head of 4,27 m and 147,56 HP pump power. Impeller pump was designed using the type of Gottingen 490 airfoil profile, with an outer diameter of the impeller of 0,773 m.

Key words: flood, submersible axial pump, housing, type of Gottingen 490 airfoil