PLANNING OF A GOODS LIFT IN BUILDING A OF THE KALIMANTAN INSTITUTE OF TECHNOLOGY CAMPUS

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ABSTRAK

Building A of Kalimantan Institute of Technology has various function spaces on each floor, which causes the need for intensive mobilization of goods between floors. Currently, the process of transporting goods is still done manually via stairs, which risks causing injury and is not in accordance with the principles of Occupational Safety and Health (K3). Based on the Minister of Manpower Regulation No. 6 of 2017 and SNI 03-1739-2002, vertical transportation facilities such as freight elevators are required to meet safety and accessibility aspects. This research aims to design a safe and efficient freight elevator for Building A with the main structure using steel. The planning results show that the freight elevator has a capacity of 500 kg, carriage dimensions of 1.83 x 1.3 x 2.1 meters, 8 mm diameter steel slings, and a 17 HP drive motor. The main structure is designed with 200x200x8x12 mm H-beam columns and 150x100x6x9 mm IWF beams and 150x100x6x9 mm IWF lateral stiffeners (braces), while the foundation uses 30 cm diameter drill piles 8.6 meters deep. The total estimated cost of the elevator construction is IDR 435,615,821.74. Risk analysis shows that the highest potential hazard comes from overload conditions, but can be controlled through the installation of sensors and alarms. With this planning, it is expected that the process of transporting goods in Building A will be safer, more efficient, and in accordance with technical standards.

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Keyword :
Freight elevator, Steel, cost, danger, risk of freight elevator.