

Thusayu Junsukon 2008: Development of a Revolving Deck of a High-rise Building.
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Mechanical Engineering, Department of Mechanical Engineering. Thesis Advisor:
Associate Professor Thanya Kiatiwat, Ph.D. 183 pages.

Revolving deck is typically installed and facilitated in a high-rise building. Accordingly, this study is mainly to develop the existing revolving deck of the high-rise building, namely Baiyok Sky Hotel, due to its wear and tear. However, it should be noted that this existing revolving deck has been used for 7 years.

Redesign of suspension systems of the revolving deck such as frames and structures as well as rolling element bearings has been done in order to support more loads. Particularly, 6308 2Z ball bearings have been selected and replaced with all existing bearings. Driving systems have also been revised and improved by increasing the normal force between the driving polyethylene wheels and the revolving deck rails by the application of the compression coil springs. In addition, some wear and tear components have also been revised and replaced in proper manners in order to obtain more strength and durability.

After the design and fabrications of the revolving deck machine components were done, the developed revolving deck was tested and evaluated. Based on the results, it reveals that the revolving deck can be able to operate efficiently with a maximum carrying load of 200 passengers or about 200 kN at a traveling speed of about 8 minute per round.

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