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Theoretical Study of Contact Angles of a Linear Guidewa

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Summary

The contact angle affects the life and accuracy of a linear gudieway. In this study, the factors which effect the angle of contact angle of linear guideway includes contact deformation of balls and grooves, downward load, ball diameter, number of load-carrying balls, number of load-carrying rows and conformity. A theoretical approach for finding the contact angle changed of linear gudieway is proposed by using Hertzian theory and Lundeberg/Palmgren approach. The results are useful for modification of loading capability of linear gudieway under load and different preload setting.