Annotation

In this degree work automated electric drive of subway escalator with a type LT-1 is viewed. The project includes following sections: technological part, life safety, economic component.

In the technological part we define the static load on the shaft of the engine and considered the requirements to drive. As a result the asynchronous drive with a phase rotor of type 4АНК315М12У3 was chosen. Electro mechanical and natural mechanical characteristics of selected engine have been obtained . To gradually increase the speed we calculated starting resistance and respectively chose the box of resistance. The dependency of rotor current, torque, angular velocity to time change were plotted. Further, annual and daily power losses, average efficiency and power factor were calculated.

In Matlab 6.5 program the virtual model of this escalator was built and transition processes were studied.

In the life safety part there is safety regulations during the work of escalator and it's repair. And natural lightning calculations in escalator compartment were also made.

The economic component obtains cost-effectiveness calculations of this engine .