Abstract

The city of Vienna owns a highly developed rapid-transit. It is composed of undergrounds, tramways, buses and the rapid-transit rail system. The tramway rapid-transit comprises new tramway vehicles named ULF (Ultra Low Floor) and traditional tramway vehicles.

The traditional tramway vehicles have got high steps which make it difficult for wheelchair users, people with a stroller, or old people to get on the tram. The city of Vienna has decided to replace the old vehicles with more recent ones to provide better accessibility for passengers.

The ULF is one of the most recent tramway vehicles in the world. It has technical particularities like its ultra low floor. Resulting from this, the chassis is constructed with an innovative method which influences the wheels drive.

Compared to a traditional tram, the characteristics of the ULF create a considerably higher amount of rails wear in the junction bend.

The main aim of this master thesis is to examine the impact of the routes geometric characteristics on rails wear in the junction bend.

In the first place, this paper presents the ULF as well as the geometric characteristics of the junction bend used in the Vienna’s rapid-transit. Chapter 5 opens with a data analysis of a study conducted by the transport organisation “Wiener Linien”. Secondly, it proposes measures in order to prevent the rails from wearing out.