



ROAD SURFACE FOR HIGH-SPEED AND HIGH-SPEED TRAFFIC

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Abstract. *This article discusses the rails used on the high-speed section of the Uzbek railways and their categories. The article mainly discusses the rails and their development. Since rails have a special place, the railway and metallurgical industries pay great attention to the development of technologies that include defects and damage, which are the basis for assessing all problems related to the condition of the rails.*

Key words: *defect, rail, deformation, elasticity, alignment, radius, curvature, deterioration, rail head, longitudinal, vertical.*

INTRODUCTION. Today, we can see that the reforms being implemented in our country serve the development of our country and create wide-ranging opportunities in the transport sector. As an example, our leader recently reviewed a presentation on measures to develop railways.

In accordance with the decision of the Head of our state dated October 10, 2023, this sector is being radically reformed. The Joint-Stock Company "Uzbekistan Railways" was structurally modified, reducing the non-residential building, adjacent land and redundant duties. As a result, the company, which previously worked at a loss, came out last year with a net profit of 47 billion soums. With the formation of the "temiryolkargo" company, the efficiency of using freight cars increased by

2 times. But still a lot of opportunities. The presentation outlined the tasks of developing the infrastructure of the industry and increasing income.

In particular, the capacity to transport transit cargo is not fully benefited. This can be done by increasing the income by 40 percent in the coming years by 2 times. For example, freight trains were first launched on the China-Turkey route. New trains are being brought to our country, and the number of trains is increasing year by year. Therefore, it was emphasized that it is necessary to consistently increase the throughput of railway infrastructure [1].

RESEARCH METHODOLOGY. Rails are the main element of the road top construction. They take the pressure from the wheels of the moving content and transmit it to the elements that lie further down, as well as guiding the wheels of the moving content throughout the movement. On sections with automatic blocking, the rails serve as a signal current conductor, and in electric traction, they also serve to conduct reverse (reverse) traction current. The main requirements for rails are that they are robust and stable, ensure safe movement of trains with set maximum speeds, have the greatest service life, are not expensive and are convenient in preparation and use (operation). To put it simply, this means the following:

- Rails must be heavy to ensure the stability of the track, both under the influence of rolling stock and temperature. At the same time, the rails should be as light as possible to save metal and make them easy to handle, transport, and replace;

- To better resist bending under a moving load, the rails must be sufficiently rigid (have the required moment of inertia). The wheels

must be sufficiently flexible (elastic) to prevent them from hitting the rails with force, which could damage the running parts of the rolling stock, and cause the rails to bend and break;

□ In order to prevent the rails from breaking due to the shock-dynamic impact of the rolling stock, it is necessary to use a viscous material in their manufacture. However, since the rails receive concentrated forces from the wheels, the rail metal must be hard enough to avoid buckling, crushing, or wearing out;

□ To ensure the necessary adhesion between the rails and the driving wheels of the locomotives, the sliding surface of the rail must be slightly rough. On the contrary, its sliding surface should be flat to reduce resistance to wheel movement;

□ in order to simplify the work of maintaining the road economy, the number of rail types should be reduced. From the interests of the state, the use of rails of one type in different operating conditions in order to save metal is not suitable. Therefore, the number of rail types should be reduced in a rational, purposeful manner.

CONCLUSIONS AND SUGGESTIONS. On high-speed and high-speed highways, rails with a mass of no less than 60 kg should be applied. In this case, the following were adopted in the Joint-Stock Company" Uzbekistan Railways":

In high-speed sections: rails (Figure 1) that meet high-speed operating conditions according to the standards in force in the world (e.g. DT350SS, OT350SS, Table 1), Rail Welding trains with an electric contact method with a length of at least 700 m from 25-meter rails to plets with a length of at least 700 m., According to the technical

instructions for maintenance and repair, rails must be laid in sections that are connected to sections of the same length as the block section.

On high-speed plots: according to the requirements, the length of the rail plets for the entire route must be laid up to peregon, welded with equal-span connections, without a blocked connection using threaded conductors. Roadbeds without ulama must be reinforced according to the methodology at the optimal temperature. Rail plets of a non-connecting road must be made by welding from new short rail plets or R65 rails (Figure 1) with a length of at least 23.5 M, corresponding to high-speed operating conditions (e.g. DT350VS, NT320VS, Table 1)

Table 1

Rail categories

Category designation	Rail category description
DT370IK	Differentially thermally strengthened, rolled/individually heated, highly resistant to abrasion and contact
OT370IK	Volume and thermally reinforced, highly resistant to abrasion and contact
DT350VS	Differentially thermally strengthened, rolled/individually heated, for high-speed passenger traffic
DT350SS	Differentially thermally strengthened, rolled/individually heated, for high-speed (high-speed) joint movement
OT350SS	Volume and thermally reinforced, for high-speed (high-speed) joint movement
DT350NN	Differentially thermally strengthened, rolled/individually heated, low-temperature reliability
OT350NN	Volume and thermally reinforced, with low-temperature reliability
DT350	Differentially thermally strengthened, general purpose rolled/individually heated
OT350	Volumetric and thermally reinforced, for general purposes
NT320VS	thermally strengthened, for high-speed passenger traffic
NT320	thermally unreinforced, general purpose, with an excess strength level

NT300	thermally unreinforced, general purpose, with an excess strength level
NT260	thermally unreinforced, general purpose, with a normal strength level

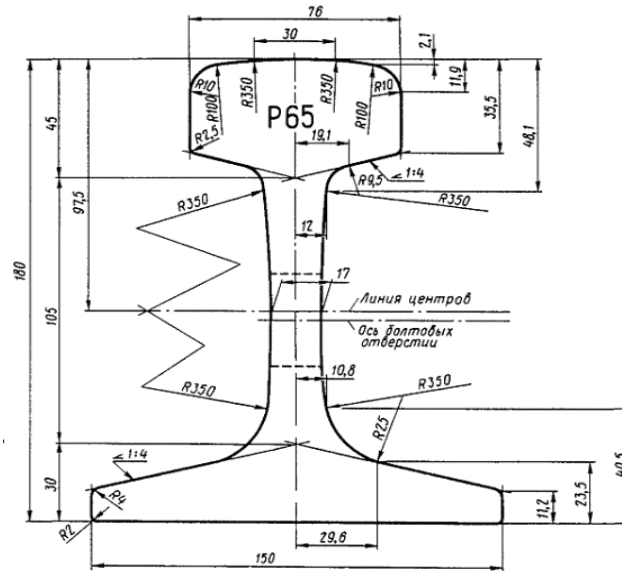


Figure 1. R65 type rails

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