LONGEVITY OF THE MACHINE-BUILDING TIRES

Makhmudzhon Melibayev

Namangan engineering-pedagogical institute, Namangan, UZBEKISTAN

Technical requirements for the machine-building to tires determine in the final analysis their operating characteristics. Tire interacting with the bearing surface and the knots of machine, to a considerable degree it influences the operational of the indices of its work. One of the most main requirements for the tires an increase in their longevity.

In the absence on the tires of manufacturing defects and observance of operating instructions the longevity of tires is determined by the intensity of the wear of tires made of the construction and by the working conditions. As a result of interaction of tire with the bearing surface first of all the protector is worn out. The tires of the wheels of tractors work in by that leading and slave regimes on the bearing surfaces being deformed.

Laws governing the wear of the tires of drive and slave wheels on the nondeformable surfaces are in sufficient detail presented in the work [1]. The wear of tires on the surfaces being deformed earlier practically was not examined.

The wear of the section of rubber of the protector (U) it is approximately proportional of the work lost in friction of this section.

The expression is correct for the unit of the area of section:

\[ U = K_u A_{tr} = K_u P_{tr} \mu_{tr} S \] (1)

\( K_u \) - the coefficient of the grating ability of soil;
\( A_{tr} \) - the specific work lost in friction;
\( P_{tr} \) – average nominal pressure in the contact;
\( \mu_{tr} \) – the coefficient of the friction of rubber against the soil;
\( S \) – distance of sliding.

The longevity of the tire of driven wheel to the certain degree can be increased by an increase in the length of the region of the contact of tire, since equivalent reduction in the average specific pressure in the contact will occur with the constant normal load on the wheel and will decrease slipping due to the distribution of longitudinal forces by the larger number of cleats.

Thus, with the work both of drive and slave machine wheel on the bearing surface being deformed an increase in the length of the region of the contact of tire contributes to an increase in the longevity of tires due to the decrease of the intensity of their wear.

Reference