NOW A DAY AGRICULTURAL TRACTOR'S TIRES NOMENCLATURE AND CLASSIFICATION BY PURPOSE

Rebrova Olena

National Technical University «Kharkiv Polytechnic Institute», Kharkiv

According to the standards of the European Tire and Rim Technical Organization (ETRTO), the range of agricultural tractor tires must meet all the needs of agricultural production. Therefore, today, the nomenclature of radial tires (metric marking) consists of more than 160 standard sizes. By purpose, tractor tires have European and American classifications.

According European classification the R-1 tread pattern is used for all agricultural operations and generally provides good traction in most soil conditions. The tread pattern is aggressive to develop high traction on soft and hard surfaces. Tread saturation is approximately 30% for good self-cleaning on wet soils. It is the most common type of tread in the USA.

The R-1W tread originated in Europe and has 20% more tread depth than the R1. Tractors in Europe operate a high percentage of the time on paved roads, and a deeper tread increases tire life. R-1W is the most common type of tread in Europe for wet soils.

The R-2 tread is used on wet agricultural soils where the tractor must operate in mud or standing water in the field. Typical fields of application: rice, sugar cane and tall vegetable crops. The R-2 tread depth is twice the standard R-1 tread depth. The R-2 protector looks very aggressive, it usually uses an angle of inclination of the soil grips increased to 45^0 for better self-cleaning on wet soils.

The R-3 tread has a non-aggressive appearance and is designed for minimal topsoil disruption, such as airports, golf courses, pastures, roadside maintenance, dryland operations, large heavy duty manure or grain trailers. The tread usually has a relatively closed pattern to evenly distribute the load, the tread saturation is within 70%.

The R-4 tread is used for construction and industrial vehicles such as excavators and bucket loaders. The tread depth is approximately 70% of the R1 tread and is designed for good durability on paved roads and reasonable traction on construction soils. The saturation of the R-4 tread is usually 50%.

There is some correspondence between the European and American tire classifications by purpose. Thus, the R-1 tread pattern according to the European classification corresponds to the HF-2 tread pattern according to the American classification.

Similarly, there is a correspondence between the tread patterns of R-1W and HF-3, R-2 and HF-4, R-3 and HF-1. The HF protector is used on wide-profile tires with a large volume, which are operated at low pressure.

It should be noted, that the American classification is broader and has more categories of tires by purpose, unlike the European classification.