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COMPARATIVE ANALYSIS OF THE RESULTS OF LABORATORY, ROAD AND PROVING GROUND TESTING OF THE WEAR OF DISC-BRAKE FRICTION LININGS

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The testing of the functional characteristics of brakes for motor vehicles and trailers is an activity complex in many respects. In addition to the reliable measurement of the parameters of the brake work load and, in that context, the choice of the methodology of laboratory tests, it is indispensable to provide an authentic environment in the laboratory during testing, i.e. representative conditions corresponding to road brake tests. It is also necessary to apply objective methods in assessing the obtained test results and evaluating the functional characteristics under assumed operating conditions. The Institute for Motor Vehicles of the Faculty of Mechanical Engineering in Belgrade has scored significant results in this area. The present paper is an attempt to show that the comparability of results of different tests of a single brake, in this case, laboratory and road and proving ground tests, is realistic if the mentioned tests are carefully organized and carried out. Comparability has been demonstrated on the estimated life of disc brake friction linings tested in these two manners and according to the method developed at the Faculty of Mechanical Engineering in Belgrade.

Key words: disc brake, friction and wear, life prediction.

KOMPARATIVNA ANALIZA REZULTATA LABORATORIJSKIH, PUTNIH I POLIGONSKIH ISPITIVANJA ISTROŠENJA FRIKCIIONIH OBLOGA DISK-KOČNICA

Ispitivanje funkcionalnih karakteristika kočnica motornih vozila i prikolica je aktivnost, kompleksna sa više aspekata. Pored pouzdanog merenja parametara radnih opterećenja kočnice i u tom kontekstu, izbora metodologije laboratorijskih ispitivanja, neophodno je obezbediti pravu sredinu u laboratoriji tokom ispitivanja, tj. reprezentativne uslove koji odgovaraju putnim istraživanjima kočnica.

Takođe, neophodno je primeniti objektivne metode procene dobijenih rezultata ispitivanja i ocene funkcionalnih karakteristika pri pretpostavljenim radnim uslovima.

Institut za motorna vozila Mašinskog fakulteta u Beogradu postigao je značajne rezultate u ovoj oblasti.

Ovaj rad je pokušaj da se pokaže da je sličnost rezultata različitih ispitivanja iste kočnice, u ovom slučaju laboratorijskih, putnih i poligonskih ispitivanja, realna ako se pomenuju ispitivanja pažljivo organizuju i sprovedu. Sličnost je demonstrirana na procenjenom veku frikcione pločice disk kočnice ispitivanom na ova dva načina, a prema metodu razvijenom na Mašinskom fakultetu u Beogradu.

Ključne reči: disk kočnice, trenje i habanje, predviđanje veka trajanja.