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PASSENGER CAR BODY BEHAVIOUR TESTING UNDER QUASI-STATIC CONDITIONS

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The static testing results do not yield sufficient data that can be used for predicting body behaviour at impact. In order to create conditions for predicting this behaviour during impact, the Automobile R&D Institute has developed the method for quasi-static testing of the body behaviour, under conditions of large deformations, including the following: measurements of the whole body deformation flow at the selected measuring locations, measurements of the total body deformation at more than 150 measuring locations, as well as body behaviour recording using several cameras. The conducted research studies give additional data concerning behaviour of the body supporting structure elements on the frontal or rear frame. The testing conditions are less favorable for the body itself, both from the standpoint of the loads imposed under real conditions and at impact, because the testing is performed until the body cracks, thus the influence of other power train components (that can lead to a different load distribution on the body) is eliminated.

Key words: car, car body, testing.

ISPITIVANJE PONAŠANJA KAROSERIJE PUTNIČKOG AUTOMOBILA U KVAZISTATIČKIM USLOVIMA

Rezultati statičkih ispitivanja ne daju dovoljno podataka na osnovu kojih bi se moglo predvideti ponašanje karoserije pri sudaru. U cilju stvaranja uslova za predviđanje ponašanja pri sudaru, u Institutu za automobile razvija se metoda za kvazistatičko ispitivanje ponašanja karoserije, u uslovima velikih deformacija, koja obuhvata: merenje celog toka deformacije karoserije na izabranim mernim mestima, merenje ukupne deformacije na >150 mernih mesta kao i snimanje ponašanja karoserije sa više kamera. Sprovedena ispitivanja daju dopunske podatke o ponašanju elemenata noseće konstrukcije karoserije čeonog ili zadnjeg kostura. Uslovi ispitivanja nepovoljniji su za samu karoseriju, bilo u odnosu na opterećenja u realnim uslovima ili pri sudaru, jer se ispitivanje sprovodi do sloma konstrukcije i eliminisan uticaj ostalih agregata koji utiču na drugojačiju preraspodelu opterećenja na karoseriju.

Ključne reči: automobil, karoserija, ispitivanja.