

Abstract

The development and conversion into hardware of a b-pillar test bed is shown. The target is to reproduce the same load on the b-pillar as in the whole vehicle; moreover the number of the used components should be as small as possible. During the development it turned out that the influence of the doors on the b-pillar is significant. In order to disclaim the doors it is necessary to develop a special impactor.

The calibration of the test bed in reference to a particular type of vehicle respectively to the specific test is done using numerical simulations. For this reason as basis of comparison a whole vehicle simulation is used.

For the conversion into hardware a robust and flexible solution is aspired. As a result it is possible to check different types of vehicles, in addition to that components of the left and right side of the vehicle can be tested.

The validation of the procedure is shown using a whole vehicle crash test. The results of the component test, in detail the kinematics, the rate of loading and the deformation, are matching well in reference to the requirements.