

Prediction and Cause Analysis of Tire Performance Change according to Carcass Angle Variation in Radial Tire

Kyung-Min Yun, Yeong-Hun Choi, Sun-Myung Kim[†]
Product Industrialization Technology Department,
Hankook Tire & Technology Co., Ltd.
e-mail:kmyun@hankookn.com

레이디얼 타이어에서 카카스 각도 변화에 따른 타이어 단품성능 변화 예측 및 원인 분석

윤경민, 최영훈, 김선명[†]
양산개발담당, 한국타이어엔테크놀로지(주)

Abstract

Bias tires are made with reinforcing cord which is laid out diagonally (typically 30 or 40 degrees) from the direction of travel from each bead to bead. Bias tire is easy to maneuver steering while at low speeds and suitable for heavy loads. However, there are disadvantages with large tread deformation and service life. A radial tire has been developed to compensate for the performance of the bias tire. A radial tire is a tire in which the carcass cord is arranged in the lateral direction of the tire and is widely used for general passenger cars. Since the early 2000s, tires which have changed carcass angle have been developed. In addition, there has recently been a discussion to officially revise the definition of the radial format. In this study, the tire performance change was predicted according to the angle change of the carcass cord, and the finite element analysis method was used to predict the performance change. The cause of the changed performance was analyzed and as a result of the study, it is judged that the handling performance will improve according to the angle change of the carcass cord.

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