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Design on 235/35ZR19 Ultra Low Profile Passenger Car Radial Tire

QIN Yanfen, ZHANG Dian, CHENG Long, YANG Zhe

(Zhongce Rubber Group Co., Ltd, Hangzhou 310018, China)

Abstract: The design on 235/35ZR19 ultra low profile passenger car radial tire was described. Three kinds of contour design schemes were analyzed by using the finite element analysis method, and the best scheme was selected. In the structure design, the following parameters were taken: overall diameter 643 mm, cross-sectional width 247 mm, width of running surface 215 mm, arc height of running surface 8.2 mm, bead diameter at rim seat 486.6 mm, bead width at rim seat 228 mm, maximum width position of cross-section (H_1/H_2) 0.955, asymmetric variable pitch pattern, pattern depth 8 mm, and number of pattern pitches 35 (left) and 32 (right). In the construction design, highly silica-filled compound with coupling agent for tread, 2+4×0.22HT steel cord for belt, two layers of 1100dtex/2DSP polyester cord for carcass, using the single stage building machine to build tire, and B-type hydraulic double mold curing press to cure tire. It was confirmed by the tests of the finished tire that, the inflated peripheral dimension, press through strength, bead unseating resistance, high-speed performance, endurance and low-pressure endurance met the corresponding national standards and development requirements.

Key words: passenger car; radial tire; low profile; finite element analysis; structure design; construction design

一种子午线轮胎带束层分离结构

由福建省海安橡胶有限公司申请的专利(公布号 CN 111746201A, 公布日期 2020-10-09)

“一种子午线轮胎带束层分离结构”, 涉及一种子午线轮胎带束层分离结构, 从里向外包括帘布层、带束层和胎面。带束层为多层结构, 其中设有由分离的3条窄带束条和拼接在3条窄带束条间的2条窄胶条组成的增强带束层, 3条窄带束条分别为两侧窄带束条和中间窄带束条。本发明巧妙地采用分离的3条窄带束条与2条窄胶条拼接形成增强窄带束层结构, 尤其是中间窄带束条嵌入高伸长率的钢丝帘线, 能有效分散胎冠中部受力, 减少胎冠中部剥离的发生, 延长轮胎的使用寿命。

(本刊编辑部 马 晓)

木质素在制备子午线轮胎中的应用

由南京工业大学申请的专利(公布号 CN 111748133A, 公布日期 2020-10-09) “木质素在制备子午线轮胎中的应用”, 公开了木质素在子午线轮胎制备中的应用, 木质素可全部或部分替代间苯二酚, 同时, 木质素也可全部或部分替代防老剂。与现有技术相比, 本发明利用生物质来源的木质素或改性木质素全部或部分替代间苯二酚, 以达到降低成本和环保无毒的要求; 尤其是本发明采用脱甲基化改性后的木质素能够有效提高橡胶的各项性能。另外, 木质素作为防老剂可以提高子午线轮胎的耐热氧老化性能, 老化后性能变化率明显低于未添加木质素的子午线轮胎。

(本刊编辑部 马 晓)