

mm。试验结果表明,轮胎的最小破坏能为4 967 J,为国家标准值(2 825 J)的176%,轮胎强度性能良好,达到国家标准要求。

4.3 耐久性能

按照GB/T 4501—2008进行耐久性试验,试验条件为:充气压力 830 kPa,额定负荷 3 750 kg,试验速度 55 km·h⁻¹,当轮胎行驶47 h后,每行驶10 h速度增加5 km·h⁻¹,负荷率增加10%继续进行试验,直到轮胎损坏为止。试验结果表明,成品轮胎累计行驶时间为85 h,试验结束时轮胎胎冠周向起鼓,轮胎耐久性能良好,符合国家标准要求。

4.4 胎圈耐久性试验

按照企业标准进行胎圈耐久性试验,试验条件为:充气压力 650 kPa,试验负荷 7 000 kg,

试验速度为30 km·h⁻¹。试验结果表明,成品轮胎累计行驶时间为119 h,试验结束时轮胎胎圈裂开,胎圈耐久性能达到企业标准要求。

5 结语

12.00R20 18PR全钢载重子午线轮胎轻量化产品的充气外缘尺寸、强度性能和耐久性能均满足国家标准要求,胎圈耐久性能达到企业标准要求,成品轮胎质量比正常生产的12.00R20 18PR全钢载重子午线轮胎减小4.5 kg,工艺性能稳定。该产品在市场上受到客户的一致好评,一是因为其优质的品质,二是因为较大的价格优势,为公司创造了很好的经济效益及社会效益。

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Lightweight Design of 12.00R20 18PR Truck and Bus Radial Tire

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Abstract: The lightweight design of 12.00R20 18PR truck and bus radial tire was introduced. In structure design, the following parameters were taken: overall diameter 1 120 mm, cross-sectional width 316 mm, width of running surface 230 mm, arc height of running surface 7.9 mm, maximum width position of cross-section (H_1/H_2) 0.932 8, pattern depth 16 mm, block/total ratio 69.76%, and number of pattern pitches 49. In construction design, the following processes were taken: co-extruded tread, 0.25 + (6+12) × 0.225 HT steel cord for carcass, 4+6 × 0.30 HT steel cord for 1[#] and 2[#] belt, 3 × 4 × 0.22 HE steel cord for 3[#] belt, 3 × 7 × 0.20 HE steel cord for 0° belt, Φ1.65 mm high strength steel for bead wire, and using three-drum building machine to build tire and type B double mold hot plate curing press to cure tire. It was confirmed by the finished tire test that, the inflated peripheral dimension, strength performance and endurance performance reached the requirements of design and national standards, and the bead endurance performance reached the requirements of enterprise standard.

Key words: truck and bus radial tire; lightweight; structure design; construction design

一种耐低温轮胎用橡胶复合材料 及其制备方法

中图分类号:TQ336.1;U463.341 文献标志码:D

由安徽创奇乐智能游乐设备有限公司申请的专利(公开号 CN 105462019A, 公开日期 2016-04-06)“一种耐低温轮胎用橡胶复合材料及其制备方法”,涉及的耐低温轮胎用橡胶复合材料配方为:再生胶 60~80,硅橡胶 5~10,凹

凸棒土 5~10,白云石粉 3~5,松香 4~6,环氧大豆油 3~5,丙烯酸丁酯 2~4,过硫酸钾 0.1~0.2,芥酸酰胺 1~2,硬脂酸锌 1~2,十二烷基硫酸钠 0.1~0.2,复合助剂 20~30,硫黄 1~2。该橡胶复合材料具有良好的力学性能和加工性能,用其生产的轮胎胎面耐低温性能好,不易变硬发脆,适合在冬季寒冷环境中使用。

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