

表 3 3+9+15×0.20ST 替代 3+9+15×0.225HT
 钢丝帘线用于轮胎生产成本对比

项 目	3+9+15× 0.20ST	3+9+15× 0.225HT
单丝直径/mm	0.20	0.225
帘线直径/mm		
平均值	1.24	1.39
最大值	1.30	1.46
最小破断力/N	2 750	3 120
线密度/(g·m ⁻¹)	6.8	8.63
破断力/直径/(N·mm ⁻¹)	2 218	2 245
破断力/线密度/ [N·(g·m ⁻¹) ⁻¹]	404	362
压延密度/(根·dm ⁻¹)	60	50
帘布钢丝间距/mm	0.45	0.61
帘布厚度/mm	2.5	3.0
钢丝帘线质量指数	90	100
胶料质量指数	92	100
帘布质量指数	91	100
帘布强度指数	101	100

3 结语

提高轮胎性能、减小轮胎质量、降低生产成本、增强产品竞争力是轮胎工业发展的总趋势,钢丝帘线是子午线轮胎的重要骨架材料,选用无外缠丝、同捻向结构和高强度的胎体用钢丝帘线,有利于延长轮胎的使用寿命,提高轮胎翻新率。

采用 3+9+15×0.20ST 钢丝帘线替代 3+9+15×0.225HT 钢丝帘线用于 12.00R20 高负荷全钢载重子午线轮胎胎体,可以提高轮胎的负荷性能,在安全性能略有提高的情况下,胎体成本大幅下降,并有效解决了在超载市场苛刻使用条件下轮胎胎肩脱层和胎圈空等早期质量问题,提高了轮胎的使用安全性能和负荷能力,满足了市场要求,延长了轮胎在超载市场上的使用寿命,提高了客户满意度,产品的市场占有率大大提高。

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Application of 3+9+15×0.20ST Steel Cord in Carcass of High Load Truck and Bus Radial Tire

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Abstract: The application of 3+9+15×0.20ST steel cord in the carcass of high load truck and bus radial tire was introduced. Compared with 3+9+15×0.225HT steel cord, 3+9+15×0.20ST steel cord possessed smaller diameter and cord density, and showed the advantages at rupture strength/diameter ratio and rupture strength/cord density ratio. Using 3+9+15×0.20ST steel cord instead of 3+9+15×0.225HT steel cord in the carcass of 12.00R20 high load truck and bus radial tire,it was confirmed by the test of the finished tires that,the inflated peripheral dimension changed little,the strength performance, endurance, bead endurance and high speed performance were improved,the safety performance was improved slightly,the cost of carcass was reduced remarkably,and at the same time the problems of shoulder separation and bead separation under severe using conditions were effectively solved.

Key words: truck and bus radial tire;steel cord;carcass

轮胎用复合材料组合物

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由大连轮胎厂有限公司申请的专利(公开号 CN 104672572A,公开日期 2015-06-03)“轮胎用复合材料组合物”,涉及的轮胎胶料配方包含氯丁橡胶、天然橡胶、氢化丁腈橡胶、纳米炭黑、金

刚石粉、氧化铝粉、四乙氧基硅烷和乙酸镉,其中四乙氧基硅烷和乙酸镉可以有效提高硫化速率,纳米炭黑、金刚石粉和氧化铝粉可以有效提高轮胎强度。采用该配方的轮胎具有耐磨和耐老化性能优良、磨耗寿命长的优点。

(本刊编辑部 马 晓)