

Design on 445/95R25 Tubeless All-steel Off-The-Road Radial Tire for All-terrain Crane

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Abstract: The design on 445/95R25 tubeless all-steel off-the-road radial tire for all-terrain crane was described. In the structural design, the following parameters were taken: overall diameter 1 478 mm, cross-sectional width 448 mm, width of running surface 355 mm, arc height of running surface 12 mm, bead diameter at rim seat 630 mm, bead width at rim seat 286 mm, maximum width position of cross-section (H_1/H_2) 0.96, using a large radian block pattern design, pattern depth 25 mm, block/total ratio 64%, and number of pattern pitches 54. In the construction design, the following processes were taken: adopting cap compound and base compound double-layer tread design, 3 + 9 + 15 × 0.225HT steel cord for belt, 7 × 7 × 0.22 + 0.15HT steel cord for carcass, one-step four-drum building machine for building and single-mode steamer curing press for curing. The results of finished tire performance tests showed that the inflated peripheral dimension and durability met the requirements of national standards and enterprise standards respectively. The tire was equipped with an intelligent tire monitoring system to monitor the tire status in real time during driving, and timely remind the driver to stop and rest when the tire temperature or inflation pressure reached the alarm threshold, which improved the driving safety and prolonged the service life of the tire.

Key words: all-terrain crane; tubeless all-steel off-the-road radial tire; structural design; construction design; durability; intelligent tire monitoring system

一种越野轮胎生产装置

由山东玲珑轮胎股份有限公司申请的专利(公布号 CN 115716350A, 公布日期 2023-02-28)“一种越野轮胎生产装置”,公开了一种越野轮胎生产装置,包括轮胎L型加工台以及轮胎加工支架,轮胎加工支架安装于轮胎L型加工台上,轮胎L型加工台以及轮胎加工支架上安装有轮胎收卷结构、热熔成型结构、打磨结构以及自动化搬运结构。本发明通过自动化搬运结构将轮胎原料进行自动化水平搬运,通过轮胎收卷结构将橡胶轮胎皮自动化旋转收集,同时通过内外两侧的膨胀达到先期塑型的效果,之后通过自动化水平搬运到打磨与热熔结构之间,实现热熔成型与抛光打磨,方便后期根据不同的轮胎需求进行调节。

(本刊编辑部 马 晓)

一种智能轮胎柔性应变传感器及其制备方法

由广东粤港澳大湾区黄埔材料研究院申请的专利(公布号 CN 115682913A, 公布日期 2023-02-03)“一种智能轮胎柔性应变传感器及其制备方法”,公开了一种智能轮胎柔性应变传感器及其制备方法。本发明智能轮胎柔性应变传感器的下基底层为轮胎内胎面,在制备轮胎内胎面时,通过模具压印出智能轮胎柔性应变传感器的内嵌凹槽,再制备电阻层、加装电极以及封装层,最后进行硫化得到一体成型的智能轮胎柔性应变传感器。本发明智能轮胎柔性应变传感器为压印凹槽内嵌传感器,与轮胎为同一整体,无普通传感器的外置粘贴凸出结构,不影响轮胎内胎面形貌和安全性,且可以拉伸、弯折和扭曲,稳定性更好。

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