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Application of Silicon Lattice Powder in Bead Compound of All-steel Radial Tire

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Abstract: The application of silica lattice powder in the bead compound of all-steel radial tire was studied. The results showed that, compared with the production formula, the torque change ($F_{\max} - F_L$) of the test formula decreased, indicating that the cross-linked network of the vulcanized rubber with the test formula in which the silica lattice powder replaced part of the carbon black was poor. The Shore A hardness, tensile strength, the modulus at 50% and 100% elongation of the test formulation vulcanizates decreased. After hot air aging, the change rate of the modulus at 50% and 100% elongation of the vulcanizate of the test formula was small, which was beneficial to solve the problem of fast hardening of the bead compound in the later stage, which usually resulted in brittleness and block loss. Moreover, the retention rate of the modulus at 100% elongation of the vulcanizates at high temperature was improved, which was conducive to the rigid support at high temperature. The loss factor of the test formulation vulcanizate at 60 °C was significantly reduced, which indicated the heat build-up was lowered.

Key words: all-steel radial tire; bead compound; silicon lattice powder; loss factor; heat build-up

一种用于轮胎钢丝圈生产线中的 钢丝圈接取装置

由山东胜通钢帘线有限公司申请的专利(公布号 CN 114103212A, 公布日期 2022-03-01)

“一种用于轮胎钢丝圈生产线中的钢丝圈接取装置”, 公开的用于轮胎钢丝圈生产线中的钢丝圈接取装置包括框座和设置于框座上的接取组件以及压粉组件, 框座的顶部内壁两侧均设置有鼓粉组件, 接取组件包括固定安装于框座顶部外壁的接料

环盘, 接料环盘的顶端设置呈阔口状, 接料环盘内部的两侧壁内分别开设有螺旋外通道和螺旋内通道。本发明在完成一次压粉作业后, 液压杆回抽, 升降板上将压粉组件抬起, 当升降板接触波纹底端时, 对波纹底端进行挤压, 将内部空气通过单向阀一鼓出, 进而将添粉筒底端流入通料管中的粉料通入接料环盘中, 以此对压粉组件的抬起过程进行利用, 保证接料环盘内部始终有适量的隔离粉。

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