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Application of Polyester and Nylon 66 Cord in Crown Belt of Passenger Car Tire

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Abstract: The application of polyester cord and nylon 66 cord in the crown belt of passenger car tire was studied. The results showed that, compared with nylon 66 cord, polyester cord had poor performance and needed to be improved when it was used in the crown belt of passenger car tire. The breaking strength and elongation at break of the improved polyester cord were lower than nylon 66 cord, and the initial adhesion performance was good, but it could easily decrease under the conditions of over vulcanization and thermal aging. The constant load elongation changed from significantly lower than nylon 66 to gradually approaching it with the increase of temperature. The improved polyester cord was safe to be used in the crown belt of H-speed rated tire, and its high-speed performance and high-speed durability exceeded the requirements of enterprise standard, but it would sacrifice part of the high-speed uniformity of the tire.

Key words: polyester; nylon 66; passenger car tire; crown belt; cord property; finished tire performance

益阳橡机首套大规格串联式密炼机下线

益阳橡胶塑料机械集团有限公司(简称益阳橡机)生产的首台套GE420/GE800T大规格串联式密炼机新产品日前成功下线,并顺利通过国内客户的现场试车验收。该密炼机满足了大型轮胎厂的生产工艺技术需求,产品从设计到产成仅用了1年时间。

益阳橡机的GE420/GE800T大规格串联式密炼机新产品既能满足轮胎厂绿色轮胎的炼胶工艺,也特别适合白炭黑胎面胶的混炼,同时混炼节能增效作用明显,减少了胶料混炼段数,满足了轮胎厂的环保要求,其大产量、高效率、低能耗的优势,更能满足大型轮胎厂的生产需求。

当前,绿色橡胶制品及轮胎的研制成为全球橡胶工业的热点。轮胎厂对炼胶设备的环保、节能要求越来越高,白炭黑的使用对混炼过程中的温度控制要求更高,混炼过程决定了胶料最终的性能。因此,对节能环保高效的混炼体系的需求

非常迫切。串联式密炼机因高效率、低噪声、绿色环保、节能等诸多优点而得到广大轮胎及非轮胎橡胶行业客户的高度认可。然而其设计生产需要攻克的技术难点多、加工制造难度大。

2020年年初,益阳橡机组建了一支集技术、工艺等多部门联合的40多人骨干研发团队,从电气研发、机械设计、加工工艺等方面全方位对GE420/GE800T大规格串联式密炼机进行技术攻关。研发团队通过参与设备调试、调研、走访考察轮胎厂家,与客户设备、工艺技术人员、专家交流探讨,掌握串联密炼机应用的第1手数据,在此基础上有目标、有计划地对大产量、高效率、低能耗等关键技术问题进行多次试验论证和改进。项目组全体人员经过数月的奋战,解决了GE420/GE800T大规格串联式密炼机产品核心技术数据的问题,并进行产品组装,终于完成了产品的设计和生产,产品顺利下线,并受到多家客户的认可,一举获得10台套订单。

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