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Effect of Amount of Adhesive Resin on Properties of Steel Cord Adhesive Compound

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Abstract: The effects of the amount of adhesive resin, specifically, 2.5, 2 and 1.5 phr, on the properties of steel cord adhesive compound and the adhesion between the steel cord and the adhesive compound were studied. The results showed that, with the decrease of the amount of adhesive resin, the cross-linking density of the steel cord adhesive compound decreased, the curing speed increased and the Shore A hardness, modulus and tensile strength of the compound decreased. Before aging, as the amount of adhesive resin decreased, the initial adhesion between the steel cord and the adhesive compound decreased, which was related to the decrease in the three-dimensional network formed by the adhesive resin and the methylene donor. After 7 days of heat aging or saltwater aging, the adhesion reduction rate of the adhesive compound with 2 phr adhesive resin was the smallest. In conclusion, when the amount of adhesive resin was 2 phr and the amount of adhesive RA-65 was 4.1 phr, the adhesion between the adhesive compound and steel cord was the best.

Key words: adhesive resin; curing characteristics; physical property; adhesive compound; initial adhesion; heat aging; steam aging; salt water aging

C919国产大飞机轮胎研发成功

日前,宁夏神州轮胎有限公司(简称宁夏神州)宣布,已成功研发C919国产大飞机轮胎。该公司研发的大飞机轮胎已在西安航空制动实验室通过中国商飞要求的关键试验,各项指标均达到装机要求。

据介绍,航空轮胎在材料、配方、结构、装备以及工艺等方面要求严苛,目前国际上只有几家龙头企业掌握核心技术。

宁夏神州于2018年启动国产大飞机轮胎项目,整合航空轮胎技术骨干组建研发团队,引进中

科院等优质创新资源,加快大飞机轮胎研制及产业化进程。

宁夏神州总设计师罗忠林介绍,研发团队在新型材料选择、轮胎结构设计、配方设计等关键环节做了大量开创性工作,尤其在寻找具有超高速、超负荷、耐磨、抗撕裂、质量小、寿命长的新型材料方面,联合上游企业进行了大量试验,优选出符合要求的配方,最终在航空子午线轮胎材料领域实现了质的跨越,掌握了大飞机轮胎制造的核心技术。

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