

## Finite Element Analysis and Structure Optimization of Box Beam on Injection Vulcanizer for Super Large Sealing Ring

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**Abstract:** The structure optimization of the box beam on injection vulcanizer for super large sealing ring was studied by finite element analysis software ANSYS. The results showed that, compared with the box beam without ribs, the box beam with ribs could reduce the stress and deformation. The stress of the box beam with ribs was concentrated on the middle of the two supporting column holes and was higher than the allowable stress. The concentrated stress could be reduced by using fillets at the supporting column holes. According to the orthogonal test, the stress of upper beam was minimized when the upper beam thickness was 35 mm, rib width was 40 mm and the upper beam height was 410 mm. After the structure was optimized, the stress of upper beam was less than the allowable stress, and the deformation changed little, which was helpful to extend the service life of the injection vulcanizer for super large sealing ring, and reduce the whole machine mass and manufacturing cost.

**Key words:** super large sealing ring; injection vulcanizer; box beam; finite element analysis; orthogonal test

### 倍耐力2018年第1季度销售净利率提高

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美国《现代轮胎经销商》(www.moderntiredealer.com)2018年5月22日报道:

倍耐力集团2018年第1季度销售额与上年同期相比下降,但利润却增长。

截止到2018年3月31日,倍耐力2018年第1季度净销售额为13亿欧元,净利润为9 240万欧元;而2017年同期,公司净销售额超过13亿欧元,净利润为4 950万欧元。

按2018年3月31日汇率计算,倍耐力2018年第1季度在净销售额为10亿美元的基础上,实现7 470万美元净利润。

倍耐力称,以有机增长率5.7%达到13亿欧元销售额的业绩归功于公司巩固了所有领域高端产品的领先地位。其中,高价值轮胎[457.2 mm(18英寸)及以上规格轮胎]产品的有机增长率达到13.4%[据在线金融辞典(Investopedia)释义,有机增长率是通过公司自身增加产量和提高销售额达到的增长率]。

2018年第1季度,倍耐力在北美自由贸易区的

销售额占其总销售额的18.6%;在高价值轮胎产品的拉动下,倍耐力在该地区的有机财政增长率达到10%。

(黄家明摘译 朱 嘉校)

### 一种双组分加成型阻燃液体硅橡胶及其制备方法

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由江苏天辰新材料股份有限公司申请的专利(公开号 CN 107057369A,公开日期 2017-08-18)“一种双组分加成型阻燃液体硅橡胶及其制备方法”,涉及的硅橡胶由A和B组分按质量比1:1组成。A组分配方为:乙烯基聚硅氧烷 30~50,气相法白炭黑 20~45,硅烷偶联剂 3~10,铂金催化剂 0.1~1,氢氧化铝 20~30;B组分配方为:乙烯基聚硅氧烷 50~70,气相法白炭黑 20~45,硅烷偶联剂 2~5,低含氢聚硅氧烷(氢质量分数为0.000 5~0.01) 2~20,抑制剂 0.1~0.5,氢氧化铝 20~30。该发明配方合理,工艺方法适当,制得的硅橡胶阻燃等级最高可达到V0级,且物理性能良好。

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