

Features of processing of products "Policrosh SK" in the production of molded rubber products

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Abstract

In the article rubber mixtures based on combinations of products "Policrosh SK" with commodity caoutchoucs at a ratio of 50:50 mass parts were investigated. These rubber mixtures are used for the manufacture of not responsible molded rubber products (car mats). As a raw material for the production of Policrosh SK, wastes of industrially produced synthetic caoutchoucs were used: polyisoprene (PC SKI), styrene butadiene (PC SCS) and divinyl (PC SKD) rubbers produced by limited liability ompany "Sovremennye Tekhnologii". When composing the composition of rubber compounds, the possibility of the existence of "sub-structured polymer inclusions" in Policrosh SK, an excessive content of moisture and extraneous inclusions was taken into account. To reduce these shortcomings of Policrosh SK products, a number of technological and technical methods were used to develop recipes for compositions based on them: the formulation of the rubber mixture contained up to 250 mass parts of regenerate, up to 300 mass parts of crushed vulcanizate (fraction up to 1 mm), up to 500 mass parts various fillers (low-level technical carbon, chalk, kaolin, talc, taurite TS-D, carbosil T-20, mikarb, graphite, quartz, etc.), up to 5 or more mass parts various chemical additives. As the vulcanizing agents, thiuram, sulfenamide and thiazole accelerators were used in combination with monoethanolamine. Rubber mixtures were made in the rubber mixers RSVD 250/30 in two stages. At the first stage, Policrosh SK products were mixed with regenerate, crushed vulcanizate, mineral fillers and processing aids. In the second stage, a number of ingredients, including vulcanizing agents, were introduced into the masterbatch mixture. Then, vulcanization of standard samples from rubber mixtures at 150 °C for 30 minutes in a two-storey electric press of the grade VP 400-2E was carried out. To assess of physicomechanical properties were determined: the conditional tensile strength; elongation at break; Hardness, tear resistance and elasticity by rebound. It is shown that the use of Policrosh SK products by replacing up to 50% of commodity rubbers in their combinations, together with the investigated technological additives and developed technological methods, makes it possible to produce molded rubber products of good quality and to reduce of them cost.

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