

Alleviating marching modulus in silica-filled tread compounds

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Marching modulus in vulcanisation of rubber compounds is undesired, since it causes the final properties of the vulcanizates to be instable. This characteristic exhibits a gradual increase in modulus due to a continuous occurrence of the crosslinking reaction, leading to problems in indicating the optimum cure time of a compound. In silica-filled SBR/BR tread compounds including a silane coupling agent, marching modulus is occurring to various degrees depending on the quality of mixing of the compounds. This presentation reviews the factors contributing to the marching modulus with suggestions how to alleviate this phenomenon.