

Effect of blowing agent concentration on cell morphology and impact properties of natural rubber foam

Abstract

The concentration of sodium bicarbonate as a chemical blowing agent was varied to evaluate its effect on the morphology and impact properties of natural rubber foam. The expandable rubber samples were prepared using a conventional two-roll mill and were then expanded via a heat transfer foaming process using compression moulding and an air-circulating oven. The physical properties of the natural rubber foams were characterised, and the results were observed to systematically correlate with the impact properties of the foam. The absorbed energy of the foam increases with decreasing crosslink density and relative foam density, which is associated with the formation of smaller foam cells and an increase in the number of cells per unit volume.