

Processing and properties of an ethylene–vinyl acetate blend foam incorporating ethylene–vinyl acetate and polyurethane waste foams

Abstract

Waste polyurethane foam (w-PU) and waste ethylene–vinyl acetate foam (w-EVA) were used as fillers for the production of an ethylene–vinyl acetate (EVA) blend foam. Two different foaming techniques (single-stage and heat–chill processes) were used for this purpose. The waste foam concentration was varied up to 30 wt % of the original EVA. The physical, mechanical, and morphological properties of the filled foam were studied. The single-stage process produced blend foams with a lower density and a greater cell size than the foams obtained by the heat–chill process. The density and compression strength of the blend foam increased as the percentage of w-PU foam increased. However, for the w-EVA/EVA blend foams, the addition of w-EVA foam did not significantly affect the density or compression strength compared to the original EVA foams.