

Development and Testing of Ferrous Material Blend with Ethylene Vinyl Acetate (EVA)’’

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Abstract—*In this research work, Ethylene Vinyl Acetate (EVA) is blended with ferrous material by melt blending on two roll mill. The ferrous material (Mild steel of C₂₀ grade with 45µm size) and EVA are blended to test the mechanical properties (most importantly magnetic property test). The hardness and magnetic behaviour of the produced blends were investigated, experimentally, by carrying out Shore-D hardness tester and magnetic property test is done by Universal Testing Machine (UTM). The test results show that there is a remarkable enhancement in hardness and magnetic properties of the blend. The maximum increment in magnetic and hardness properties of the blend is at 20% loading of ferrous material in EVA. However the decreasing trend is observed in the tensile strength of the EVA/Ferrous blend because of break in fibre chain of EVA. There is a little increase in density of EVA/ Ferrous material blend.*

Keywords: *Ethylene Vinyl Acetate (EVA), ferrous material, two roll mill, magnetic property, hardness, density.*