MECHANICAL, THERMAL AND PHYSICAL PROPERTIES OF RECYCLING PVC PRODUCTS: PIPES, SHAMPOO BOTTLES AND CABLES

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Three recycled PVC products, blue pipes, shampoo bottles and cables, were investigated in terms of mechanical, physical and thermal properties by adding them into virgin PVC compounds, PVC pipes and shampoo bottles being added into pipe and bottle grades of virgin PVC compounds and PVC cables being loaded into cable grade of virgin compound for various contents (0-80%w/w). The results showed that tensile strength of PVC pipe and cable compounds increased with recycled PVC content, but this was not the case for the shampoo bottles. The change in the hardness property of all compounds was similar to that in the tensile properties. Adding the shampoo bottle recyclates into the virgin compounds gave a considerable improvement in the impact strength. Loading the PVC recyclates into the virgin compounds in all cases resulted in increases in $T_d$ and $T_d$ except for PVC cables, that gave lower $T_d$ as the recycle content was increased.