

The Hydrological Performance of Lightweight Green Roofs Made From Recycled Waste Materials As the Drainage Layer

ABSTRACT

Green roofs can be used for promoting infiltration and provide temporary storage spaces. Hence, in urban stormwater structural design, the investigation of the hydrological performance investigation is often required. Thus, this paper presents the results of a hydrological investigation in term of peak flow reduction and green roof's weight using 0, 2, and 6% slope for three specimens drainage layer in green roofs. Three types of recycled waste are selected for each test bed which is rubber crumbs, palm oil shell, and polyfoam. Another test bed without a drainage layer as a control. The result indicates that rubber crumbs can be used as a stormwater control and runoff reduction while ensuring a good drainage and aeration of the substrate and roofs. From the results obtained shows that rubber crumbs are suitable as a drainage layer and a proposed slope of 6% are suitable for lightweight green roofs.