

The aim of this study is to evaluate the existing reinforced concrete-based roofs of residential buildings in Iraq and also to suggest modified roof configurations in order to improve roof thermal performance. Dynamic thermal parameters including thermal admittance and decrement factor beside the thermal resistance and its reciprocal (U -value) were used in this evaluation. It was found that using light-weight precast rubberized concrete flags instead of conventional concrete ones has no significant influence regarding thermal behavior. Installing false ceiling as a finishing associated with traditional uppermost roofing layers has been the efficient way in increasing thermal resistance and significantly decrease thermal decrement factor among the other suggested configurations.