

Long Term Performance of Heat Pump System under Influence of Aging Effects

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Abstract

Heat pumps are energy efficient devices crucial for energy transition to sustainable heating solutions. Potential of the technology in reaching goals related to increased share of renewable energy in use and reduction of greenhouse gas emissions is directly correlated with seasonal coefficient of performance. Harsh working conditions, improper sizing and lack of maintenance can lead to deterioration of energy efficiency, increased running hours of the system and reduced thermal output during life cycle of equipment. Mentioned leads to the reduction of share of renewable energy in use and negatively affects whole building performance. In this research, model of heat pump system in single family building is used to assess the degradation rate models and discuss their impact on long-term system performance.