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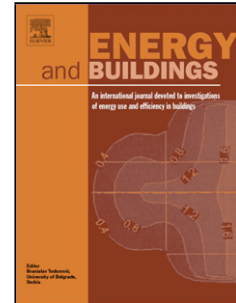
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IEA EBC Annex 59: High temperature cooling and low temperature heating in buildings

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Abstract: Improving the energy performance of the heating, ventilation and air-conditioning (HVAC) system is a key issue for building energy conservation. IEA (International Energy Agency) EBC (Energy in Buildings and Communities) Annex 59 presents a new perspective and a new concept to analyze the HVAC system in buildings. The project is organized following the idea of reducing mixing loss and transfer loss, and the work subtasks are arranged in response to the current insufficiency or inadequateness of HVAC system. Temperature level and temperature difference ΔT are emphasized in heating and cooling systems for buildings as well as heating/cooling capacity Q . Four subtasks are organized under the framework of Annex 59 dealing with different aspects of high temperature cooling (HTC) and low temperature heating (LTH) systems. Subtask A focuses on the principles and methodology. Entropy dissipation ΔE_n and equivalent thermal resistance R are recommended as indexes to investigate the transfer characteristics of an air-conditioning system. The objective of subtask B is to propose suitable indoor terminals from the viewpoint of avoiding mixing loss in spaces. Subtask C focuses on outdoor air handling process, especially for treatment of moisture. Subtask D focuses on total system analysis including case studies, with an objective to

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