

# Supply Control Algorithm For District Heating Community Buildings In Response To Outdoor Air Temperature

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## ABSTRACT

In the present study, a heat supply control algorithm that minimizes the rate of heat loss in the heat distribution lines of district heating community buildings was developed. This algorithm simultaneously controlled the supply water temperature and flow rate in response to the outdoor air temperature to minimize the heat loss rate in a distribution line. The total heat supply through the distribution lines of community buildings in Hwaseong, Gyeonggi, South Korea, was compared with the total heat consumption of all households. It was revealed that 24.1% of the heat supply to the community buildings was lost in the distribution lines. By simultaneously controlling the supply water temperature and flow rate in response to the outdoor air temperature, the developed algorithm could reduce the heat loss by 11.5%.

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