

Monthly Cooling and Heating degrees indexes

Heating degree day (HDD) is a weather-based technical index designed to estimate the heating energy requirement of buildings. HDD is derived from meteorological measurements of air temperature.

The calculation of HDD relies on the base temperature, defined as the lowest daily mean air temperature not leading to indoor heating. The value of the base temperature depends in principle on several factors associated with the building and the surrounding environment. By using a general climatological approach, the base temperature is set to a constant value of 15°C in the HDD calculation:

$$\text{If } 15^{\circ}\text{C} \geq T_{mean}^i \text{ then } HDD = \sum_i (18 - T_{mean}^i) \text{ else } HDD = 0$$

where T_{mean}^i is the daily mean air temperature of the i^{th} day.

Cooling degree day (CDD) is a climatological index describing the amount of energy requirement for building cooling (air-conditioning). As HDD, CDD is derived by using the following equation:

$$\text{If } T_{mean}^i \geq 24^{\circ}\text{C} \text{ then } CDD = \sum_i (T_{mean}^i - 21) \text{ else } CDD = 0$$

where T_{mean}^i is the daily mean air temperature of the i^{th} day.