

Case	Condition	HDD
1	$T_{\max} \leq T_{\text{base}}$ (i.e. uniformly cold day)	$\text{HDD} = T_{\text{base}} - T_{\text{avg}}$
2	$T_{\text{avg}} \leq T_{\text{base}} < T_{\max}$ (i.e. mostly cold day)	$\text{HDD} = [(T_{\text{base}} - T_{\min})/2] - [(T_{\max} - T_{\text{base}})/4]$
3	$T_{\min} < T_{\text{base}} < T_{\text{avg}}$ (i.e. mostly warm day)	$\text{HDD} = (T_{\text{base}} - T_{\min})/4$
4	$T_{\min} \geq T_{\text{base}}$ (i.e. uniformly warm day)	No heating is required, so $\text{HDD} = 0$

$$T_{\text{avg}} = (T_{\max} + T_{\min})/2$$

$$T_{\text{base}} = 18^{\circ}\text{C}$$