FACULTY OF MECHANICAL ENGINEERING CTU IN PRAGUE			
Environmental Engineering			
Hot Water Preparation			
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1/20			
1/38			

















1. Heat Demand for Hot Water Preparation				
$\begin{aligned} Q_{HW} &= Q_{HWt} + Q_{HWz} = (1+z) \cdot Q_{HWt} = \frac{(1+z) \cdot V_{HW} \cdot \rho \cdot c \cdot (t_2 - t_1)}{3600 \cdot 1000} \\ Q_{HW} & \text{heat demand for hot water preparation[kWh/day],} \\ Q_{HWt} & \text{heat fot water heating [kWh/day],} \\ Q_{HWz} & \text{heat lost during Heating and distribution [kWh/day],} \\ z & \text{relative heat loss [-],} \\ V_{HW} & \text{total hot water demand [m^3/day],} \\ \rho & \text{water density [kg/m^3],} \\ c & \text{specific heat capacity of water [J/(kg \cdot K)],} \end{aligned}$				
<ul> <li>t<sub>1</sub> cold water temperature[°C],</li> <li>t<sub>2</sub> hot water temperature[°C].</li> </ul>	Type of Building	V <sub>#W</sub> [m³/unit⋅day]	Unit	
	Family house	0,04 až 0,05	Person	
	Apartment house	0,04	Person	
	Accommodation (hotel, pension, student dormitories)	0,028	Bed	
	Restaurant	0,01 až 0,02	Food	
	Office building	0,01 až 0,015	Person	
	Sports facilites	0,1	Installed shower	
10/38	Industrial plant	0,03	Shower bath	



























































