3.10 Annual performance factor

3.10.1 Annual performance factor for HTZ 4, HTZ 8, HTZ 11, HTZ 15, HTZ 20

Details for EnEV proof:

The originator's expenditure factor must be entered in the EnEV proof for each building according to the system configuration for the construction project.

We recommend entering the effective heat recovery efficiency from the ventilation system in the EnEV proof as a maximum value of 90 %.

Туре:	HTZ 4	HTZ 8	HTZ 11	HTZ 15	HTZ 20	
Annual performance factor β_{HP}	3.755	4.180	4.252	4.150	4.244	Heating circuit design
Generator performance factor $\mathbf{e}_{h,g} = 1/\beta_{HP}$	0.266	0.239	0.235	0.241	0.236	35°/28°C (FBH)
Annual performance factor β_{HP}	3.096	3.447	3.507	3.422	3.500	Dimensioning of heating
Generator performance factor $\mathbf{e}_{h,g}$ = 1/ β_{HP}	0.323	0.290	0.285	0.292	0.286	circuit 55°/45°C

The base COP values contain the power consumption of peripheral units such as fans, circulating pumps in energy efficiency class A and the control system.



3.10.2 Details for passive house project planning package HTZ 4-20

Details for Passive House Project Planning Package 2007 (PHPP), compact sheet:

Ventilation HTZ 4, HTZ 8, HTZ 11, HTZ 15, HTZ 20:

□ Effective heat recovery efficiency: 84 %

□ Energy efficiency:

0.45 Wh/m³

Note: If certification is planned by the Passive House Institute, the heat recovery efficiency η_{eff,HRE} may be set at only 78%, since higher values are only accepted by the PHI for units certified by the PHI.

<u>Note</u>: The following details for heating capacity and coefficient of performance apply to storage unit heating, storage unit recharging and availability.

HTZ 4	Flow v	Flow volume of outgoing air admixture: 1300 m³/h										
Working point		A-7/ A2/ A7/ A20/										
	W35	W45	W55	W35	W45	W55	W35	W45	W55	W35	W45	W55
Heating capacity [kW]	3.20	3.10	3.00	4.50	4.30	4.10	5.40	5.10	4.90	8.10	7.90	7.40
Coefficient of performance (COP)	3.37	2.82	2.31	4.09	3.58	2.93	4.91	3.92	3.27	5.79	5.27	4.35

HTZ 8	Flow v	Flow volume of outgoing air admixture: 2900 m³/h										
Working point		A-7/ A2/ A7/								A20/		
	W35	W45	W55	W35	W45	W55	W35	W45	W55	W35	W45	W55
Heating capacity [kW]	6.80	6.50	6.40	8.90	8.30	7.90	10.40	9.60	8.90	14.50	13.30	12.10
Coefficient of performance (COP)	3.40	2.60	2.00	4.45	3.32	2.47	5.20	3.84	2.87	7.63	5.54	3.90

HTZ 11	Flow v	Flow volume of outgoing air admixture: 4000 m³/h										
Working point		A-7/ A2/ A7/ A20/										
	W35	W45	W55	W35	W45	W55	W35	W45	W55	W35	W45	W55
Heating capacity [kW]	9.20	8.80	8.60	12.00	11.30	10.60	14.00	13.00	12.20	19.70	18.10	16.80
Coefficient of performance (COP)	3.41	.41 2.59 2.00 4.62 3.42 2.52 5.38 3.94 2.90 7.58 5.66 4.1									4.10	

HTZ 15	Flow v	Flow volume of outgoing air admixture: 4600 m³/h										
Working point		A-7/ A2/ A7/ A20								A20/		
	W35	W45	W55	W35	W45	W55	W35	W45	W55	W35	W45	W55
Heating capacity [kW]	11.50	11.00	10.60	15.00	14.10	13.20	17.50	16.30	15.10	24.50	22.60	20.90
Coefficient of performance (COP)	3.38	3.38 2.62 2.04 4.55 3.36 2.54 5.30 3.88 2.90 7.42 5.51 4.0									4.02	

HTZ 20	Flow v	Flow volume of outgoing air admixture: 5200 m ³ /h										
Working point		A-7/ A2/ A7/ A20/										
	W35	W45	W55	W35	W45	W55	W35	W45	W55	W35	W45	W55
Heating capacity [kW]	15.70	14.90	13.80	20.90	19.70	18.30	24.40	22.70	21.10	34.40	31.50	28.90
Coefficient of performance (COP)	3.49	3.49 2.57 1.86 4.64 3.46 2.54 5.42 4.05 2.97 7.64 5.73 4.19									4.19	

□ Specific heat losses for storage tank incl. connections: 1,4 W/K (applies only to storage units EF 580/1 and EF 580/2)

□ Average storage unit temperature: in standby mode: 45 °C

□ Priority switching of the heat pump: Domestic hot water is ADJUSTABLE (no heating priority possible).

A = outside air temperature in °C

W35 = Hot water 35°C (with secondary electric heating) or heating with heating circuit flow temperature of 35°C

W45 = Hot water 45°C or heating with heating circuit flow temperature of 45°C

W55 = Hot water 55°C or heating with heating circuit flow temperature of 55°C

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4.9 Annual performance factor

4.9.1 Annual performance factor LI 4, LI 8, LI 11, LI 15, LI 20

Details for EnEV proof:

The originator's expenditure factor must be entered in the EnEV proof for each building according to the system configuration for the construction project.

Туре:	LI 4	LI 8	LI 11	LI 15	LI 20	
Annual performance factor β_{HP}	3.755	4.180	4.252	4.150	4.244	Heating circuit design
Generator performance factor $\boldsymbol{e}_{h,g}$ = 1/ β_{HP}	0.266	0.239	0.235	0.241	0.236	35°/28°C (FBH)
Annual performance factor β_{HP}	3.096	3.447	3.507	3.422	3.500	Dimensioning of heating
Generator performance factor $\mathbf{e}_{h,g} = 1/\beta_{HP}$	0.323	0.290	0.285	0.292	0.286	circuit 55°/45°C

The base COP values contain the power consumption of peripheral units such as fans, circulating pumps in energy efficiency class A and the control system.

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