

BREEAM International 2016 Pol 01 Impact of refrigerants calculator

System Type/Name	R-Number	System capacity (kW)	Total refrigerant charge (kg)	System operational life (yr)	Refrigerant Global Warming Potential	Annual leakage rate (% refrigerant charge)	Annual purge release factor (% refrigerant charge)	Annual service release (% refrigerant charge)	Probability factor for catastrophic failure (%)	Refrigerant Recovery efficiency (%)	Refrigerant loss (operational)	Refrigerant loss (retirement)	Total lifetime refrigerant loss (kg)	CO ₂ equivalent (kg)	Direct Emissions Life Cycle kgCO ₂ equi/kW cooith capacity
Värmepump (Ropsten1-2)	R134a	156000,00	93490,00	7	1430	0,23%	0,00%	0,00%	0,02%	99,00%	1634,71	934,90	2569,61	3674542,30	23,55
Värmepump (Ropsten3)	R134a	100000,00	85300,00	7	1430	0,59%	0,00%	0,00%	0,06%	99,00%	3870,44	853,00	4723,44	6754518,36	67,55
Kylmaskin (Nimrod)	R134a	36000,00	19789,00	7	1430	2,40%	0,00%	0,00%	0,24%	99,00%	3659,63	197,89	3857,52	5516253,91	153,23
Värmepump (Hammarby)	R134a	245000,00	160205,00	7	1430	0,59%	0,00%	0,00%	0,06%	99,00%	7236,60	1602,05	8838,65	12639267,04	51,59
Värmepump (Akalla)	R134a	21900,00	12374,00	7	1430	1,21%	0,00%	0,00%	0,12%	99,00%	1151,61	123,74	1275,35	1823750,04	83,28
Värmepump (Vilunda)	R134a	22000,00	12996,00	7	1430	5,83%	0,00%	0,00%	0,58%	99,00%	5829,06	129,96	5959,02	8521394,65	387,34
Värmepump (Brista)	R717	7400,00	600,00	7	0	0,00%	0,00%	0,00%	0,00%	99,00%	0,00	6,00	6,00	0,00	0,00

Total system cooling/heating capacity 588300,00 kW

Total Direct Effect Life Cycle CO₂e emissions (DELC) 66,17 kgCO₂e/kW cooith capacity

Total Pol 01 credits achieved

BREEAM International 2016 Pol 01 Impact of refrigerants calculator

System Type/Name	R-Number	System capacity (kW)	Total refrigerant charge (kg)	System operational life (yr)	Refrigerant Global Warming Potential	Annual leakage rate (% refrigerant charge)	Annual purge release factor (% refrigerant charge)	Annual service release (% refrigerant charge)	Probability factor for catastrophic failure (%)	Refrigerant Recovery efficiency (%)	Refrigerant loss (operational)	Refrigerant loss (retirement)	Total lifetime refrigerant loss (kg)	CO ₂ equivalent (kg)	Direct Emissions Life Cycle kgCO ₂ equi/kW cooith capacity
Värmepump (Ropsten 3)	R134a	76000,00	85300,00	7	1430	0,14%	0,00%	0,00%	0,01%	99,00%	946,24	853,00	1799,24	2572914,04	33,85
Kylmaskin (Nimrod)	R134a	48000,00	19789,00	7	1430	0,64%	0,00%	0,00%	0,06%	99,00%	972,79	197,89	1170,68	1674073,29	34,88
Sjövatten (Ropsten)	Vatten	70000,00	0,00	7	0	0,00%	0,00%	0,00%	0,00%	99,00%	0,00	0,00	0,00	0,00	0,00
Sjövatten + KM (Hornsberg)	R134a	80000,00	8460,00	7	1430	0,90%	0,00%	0,00%	0,09%	99,00%	588,28	84,60	672,88	962218,40	12,03
Värmepump (Hammarby)	R134a	84000,00	160205,00	7	1430	0,03%	0,00%	0,00%	0,00%	99,00%	335,92	1602,05	1937,97	2771302,74	32,99

Total system cooling/heating capacity 358000,00 kW

Total Direct Effect Life Cycle CO₂e emissions (DELC) 22,29 kgCO₂e/kW cooith capacity

Total Pol 01 credits achieved

BREEAM International 2016 Pol 01 Impact of refrigerants calculator

System Type/Name	R-Number	System capacity (kW)	Total refrigerant charge (kg)	System operational life (yr)	Refrigerant Global Warming Potential	Annual leakage rate (% refrigerant charge)	Annual purge release factor (% refrigerant charge)	Annual service release (% refrigerant charge)	Probability factor for catastrophic failure (%)	Refrigerant Recovery efficiency (%)	Refrigerant loss (operational)	Refrigerant loss (retirement)	Total lifetime refrigerant loss (kg)	CO ₂ equivalent (kg)	Direct Emissions Life Cycle kgCO ₂ equi/kW cooith capacity
Värmepump (Ropsten1-2)	R134a	156000,00	93490,00	7	1430	0,23%	0,00%	0,00%	0,02%	99,00%	1634,71	934,90	2569,61	3674542,30	23,55
Värmepump (Ropsten3)	R134a	176000,00	85300,00	7	1430	0,73%	0,00%	0,00%	0,07%	99,00%	4816,68	853,00	5669,68	8107642,40	46,07
Kylmaskin (Nimrod)	R134a	84000,00	19789,00	7	1430	3,04%	0,00%	0,00%	0,30%	99,00%	4632,42	197,89	4830,31	6907344,49	82,23
Sjövatten (Ropsten)	Vatten	70000,00	0,00	7	0	0,00%	0,00%	0,00%	0,00%	99,00%	0,00	0,00	0,00	0,00	0,00
Sjövatten + KM (Hornsberg)	R134a	80000,00	8460,00	7	1430	0,90%	0,00%	0,00%	0,09%	99,00%	588,28	84,60	672,88	962218,40	12,03
Värmepump (Hammarby)	R134a	329000,00	160205,00	7	1430	0,61%	0,00%	0,00%	0,06%	99,00%	7572,52	1602,05	9174,57	13119638,28	39,88

Total system cooling/heating capacity 895000,00 kW

Total Direct Effect Life Cycle CO₂e emissions (DELC) 36,62 kgCO₂e/kW cooith capacity

Total Pol 01 credits achieved