

	Heat pump	Gas boiler	Electrical cables	Other heating foils	NanoCloth
Benefits	Extremely high procurement costs /Use of renewable resources	Function with water heating immediately	Extremely low acquisition costs	Extremely low acquisition costs	Low acquisition costs /fast installation / possibility of installing under screed and under floor, possibility to control separately in each room, system functionality even after heating element interruption
Disadvantages	Necessity of regular inspections, uneven heating of the area, possibility of failure and heating the home	Necessity of regular inspections, uneven heating of the area, possibility of accident, disturbs comfort in the home by switching the heating, chimney is a necessity	High start-up temperature, cannot be adjusted during installation (cable cannot be shortened), system is inoperative after circuit break	Poor material processing /heat source = carbon ink /Current distribution ->Copper belt /Low lifetime	-
Possibility of temperature control in each room	No	No	Yes	Yes	Yes, with an accuracy of 0.5 °C, also possible through the App
Installation method	Requires building preparations and wiring in new building / Requires a cement layer	Requires building preparations and wiring in new building /Requires a cement layer	Necessity to install under screed	Under screed /under floor (reconstruction)	Under screed /under floor (reconstruction)
System thickness	From 10cm	From 10cm	More than 2cm	3 mm	Under floor -7mm under screed (joint insulation method)
Preserving useful area	Requires space to place the source in the house space	Requires space to place the source in the house space	Does not require a heat source	Does not require heat source, requires connection preparation (cable clusters)	Does not require a heat source and technical room
Placement options	Floor /ceiling	Floor	Floor	Floor /ceiling	Floor /wall /ceiling
Consumption	-	High, depending on the boiler modification	At least 150 W/m2	from 80 W/m2	120 W/m2
System efficiency	86-89%	86-89%	95% maximum	95% maximum	98% maximum
System functionality	The system is unable to operate after damage (unit failure)	The system is unable to operate after damage (unit failure)	The system is unable to operate after damage (open circuit)	Risk of heat carrier destruction /Copper belt breakage /Burning a local point by pulling	Possibility of connecting the system to photovoltaics (almost zero cost/year)
System life	under 6 years	10 years on average	up to 10 years	10 years maximum	80 years
Possibility of operation	When the base is dry	When the base is dry	When the base is dry	Immediately after installation	Immediately after installation
System start-up	2-3 hours	2-3 hours	10-20 minutes (heats floor, up to 70 °C)	Immediately after switching on	Immediately after switching on, 30 minutes =30 °C on the floor
Air saturation with oxygen ions	No	No	No	Air ionization occurs	Air ionization occurs
Odour removal	No	No	No	Yes, effect 81%	Yes, effect 81%
Effect on the human organism	Local heating effect	Local heating effect	Consequences of adverse effects (high floor /air temperature difference)	Healthy heat source (floor temperatures 35 °C maximum)	Healthy heat source (floor temperatures 35 °C maximum)
Connection	Necessity of project preparation for heat pump	Need for a gas connection	Need to request a larger circuit breaker for electrical connection - High consumption	Without any preparation, it's enough to use ordinary electrical connection	Without any preparation, it's enough to use ordinary electrical connection
Installation	Professional installation	Professional installation	Self-help installation	Self-help installation	Installation by trained technicians only
Connection method during installation				Clamps /polymer couplings (high material degradation)	Efficient soldering (the most durable electrical connector)
Maintenance	Regular inspections and replacement of heat pump parts	Need for regular inspection every year	X	Maintenance-free system	Maintenance-free system