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RADIATORS FOR **LOW TEMPERATURE** HEATING SYSTEMS



Radson radiators for low temperature heating systems

Comfort and efficiency are two vital aspects of every heating system. Radson radiators for low temperature heating systems deliver the ideal combination of both, giving top-level performance when used with a high-efficiency heating system.

Of course, it's no surprise that our wide range of radiators offer superb comfort and high efficiency. Radson has a long history of innovation in heating. Radson offers a full range of radiators suited for low temperature heating systems that deliver even more benefits.

We call it clever heating. Lower costs, higher comfort and better indoor climate are just some of the advantages. In the following pages you will discover even more reasons to check for the °Clever logo when choosing your next radiators. It's your guarantee that it's no ordinary radiator, it's a Radson.



Radson Compact type 21



Higher efficiency at lower water temperatures

Radiators for low temperature heating systems are the most efficient and cost-effective way to reach and maintain ideal room temperature quickly and comfortably.

Our radiators can be used at any temperature, but are best suited to low temperatures. Research has shown that radiators for low temperature heating systems are just as effective as traditional radiators in heating a space to ideal room temperature. And because they use less energy to reach and maintain that level, they are more cost-effective too.

Radson radiators for low temperature heating systems also help maintain air quality and humidity, further enhancing the comfort of any room. Individual radiators react quickly and precisely to changing temperature needs, which can differ from room to room. As incredibly efficient heat emitters, our radiators produce high levels of thermal comfort throughout any building. They produce the same comfortable indoor climate regardless of the age or model of the boiler.

- Fast and accurate reaction to changing needs.
- Use with any boiler.
- Ideal way to reach optimal indoor comfort.





Year-round climate comfort

Research shows that radiators for low temperature heating systems are more efficient in providing indoor comfort in any climate.

In Scandinavia, where harsh winters are the norm, radiators for low temperature heating systems have been a popular and welcome part of life for many decades. People there have found that the optimum temperature for system water is 55°C. At that level, the heating of residential and utility buildings is just as rapid and efficient as with higher system temperatures, regardless of outdoor temperatures. In fact, in many modern and well insulated homes, 45°C is often sufficient.

As long as a radiator is warmer than its surroundings, the air will be warmed. In modern or recently remodelled buildings the heat load for warmth is at most 40 W/m², and in many cases much less. A standard, compact radiator 1.2 metres long can quickly and efficiently heat a 15 m² space to an ideal room temperature of 20°C, using water at 45°C flow temperature and a return temperature of 35°C. This makes radiators for low temperature heating systems ideal for use with heat pumps, which are already found in many buildings, delivering results that outperform underfloor heating systems alone.

- Radiate warmth even at low temperatures.
- Same level of comfort at all temperatures.
- Combine perfectly with heat pumps.





Less energy, lower cost

Energy efficiency has never been more important, especially where cost is concerned.

Radiators for low temperature heating systems use less energy to perform efficiently. A modern family home or office building can be heated comfortably to 20°C with radiators set at system temperatures of 45°C. Traditional heating systems use water up to 75°C to achieve the same room temperature, using more energy for exactly the same results, but at higher cost. Radiators need only warm water to perform; Radson radiators can be powered by any energy source, including sustainable energy such as wind, solar and hydro.

Another benefit of radiators is that they react instantly to the controls of the thermostat. Even on extremely cold days, the warm-up time is quick, thanks to the combination of radiant and convected heat. What's more, it is easy and affordable to install, and requires little maintenance.

- Energy- and cost-efficiency.
- Can be used with any source of energy.





Improved personal comfort

We associate warmth with shelter, one of life's necessities. Warmth can also be one of life's pleasures, like the radiant heat we associate with a sunny day.

The same sensation of radiant heat can be found in the warmth from a radiator. Coming indoors on a winter's day, the welcome feeling of warmth immediately encourages the body to feel more comfortable. Radson radiators react instantly to changing temperature requirements and provide an even temperature profile throughout the room, so there are no draughts or noticeable 'hot' or 'cold' areas. That means the body's temperature receptors are maintained at a constant level, ensuring a continuous experience of thermal comfort.

Also a benefit of radiators is their ability to provide a uniform vertical temperature profile with almost the same temperature at ground level and head height, further adding to the overall feeling of comfort. Their attractive appearance is a welcome aesthetic addition to any room, providing a positive visual sensation of warmth.

- High warmth output.
- Equally efficient at low temperatures.
- Attractive appearance adds comfort to any room.





Easy to combine with underfloor heating

Research has shown that underfloor heating alone cannot provide comfortable warmth while remaining energy efficient. But when combined with Radson radiators for low temperature heating systems, underfloor heating becomes more efficient and effective.

Underfloor heating is a popular but less-than-efficient way to keep a place warm. It is slow to react, loses heat to the ground and can cause temperature stratification - layers of different levels of warmth in a room. In high efficiency buildings, underfloor heating is often used with system water temperatures of 45/35/20. A little-known fact is that the same system water that is used for underfloor heating can be efficiently used for radiators. By combining the two systems, it is possible to have different room temperatures in different rooms, and 'cold zones' are eliminated. This is particularly true in high efficiency buildings.

A dry-construction concrete floor with underfloor heating takes up to 27 minutes to warm up, and more than 2 hours to cool down. In contrast, a panel radiator warms up in 5 minutes and cools off in 30. In a combined system, the radiators can deal with the temperature fluctuations associated with underfloor heating.

One of the attractions of underfloor heating is the feeling of 'barefoot luxury' - being able to walk around with warm feet and no socks. Depending on the finishing material of the floor, a comfortable barefoot temperature is between 19 and 27 °C. But the ideal air temperature is around 20 °C. Which means your feet would be comfortable, but the rest of your body would not, in a room that may feel too warm. By combining the two systems, it is possible to have different temperatures in different rooms, and 'cold zones' are eliminated. This is particularly true in high efficiency buildings.

- Perfect combination of convection and radiation from 2 sources.
- Easy to combine with underfloor heating.
- Optimal head-to-foot comfort.





Complete indoor climate control

Radson radiators have everything you need to ensure an optimal indoor climate: fast reaction, uniform temperature and ideal air circulation.

A comfortable indoor climate relies on efficient heating. Radiators react fast to the required temperature signal from the thermostat, distributing warmth rapidly, silently and uniformly. Within a matter of minutes, the room temperature is at a consistent level throughout, from the ceiling to the floor.

To get the most from our radiators for low temperature heating systems, they are best installed beneath a window. The warm air from the radiator offsets the colder air from the window, warming the room quickly and evenly.

Another advantage of radiators for low temperature heating systems is their individual controllability. With Radson radiators, you can maintain varying temperatures in individual rooms or at different times for changing requirements. This only adds to the versatility and precision on offer from this wide range of stylish radiators.

- Fast reaction time.
- Uniform temperature - no warmth stratification.
- No unwanted airflow.



Radson Integra type 21



Efficiency from any energy source

Radiators can be used with virtually any energy source, traditional or sustainable. The result is the same - comfortable warmth.

Radson radiators can be used with any energy source, from wind to solar to hydro, ensuring future-proof ease of use. If you are installing or updating a heating system with a different energy source, you don't need to worry about the radiators. The only thing that needs adjustment or replacement is the boiler.

For people renovating homes or offices, installing radiators is a simple, quick and cost effective choice. It means that water temperatures can be lowered, saving energy and providing a quick return on investment. Society's attitudes to energy sources will shift and change as resources dwindle and new solutions are developed. But we will always need warmth, and our radiators can provide that - no matter where the energy comes from.

- Suitable for traditional and renewable energy sources.
- Energy-efficient and environmentally friendly.





100% comfort, 100% recyclable

Radson radiators provide decades of comfortable, efficient heating. When they reach the end of their useful life, every component can be separated and recycled.

Radson radiators are designed for a long service life of efficiency and comfort, in line with ISO 14001 standards for sustainable production. They are also environmentally friendly - not much goes to waste from a radiator after its lifetime. At the end of a long life cycle, all components can be recycled, and are a valuable source of steel. This can then be brought back into service as a different product. Now that's what we call clever thinking.

- Long service life.
- All metals are 100% recyclable.



Radson Vertical type 21



Safety and comfort in a healthy indoor climate

A warm and pleasant circulation of air is just one benefit of our radiators for low temperature heating systems.

The ideal combination of convection and radiant heat provides a constant, even circulation of warm air in any room. This means there are no unpleasant draughts or 'cold spots'. Radiators have a number of further advantages over traditional heating systems.

Every room has specks of dust in the air. With radiators for low temperature heating systems, these can not be burned, so there is no unpleasant odour or residue. Even in cold seasons or climates, our radiators, when working at full force, have negligible impact on air humidity, which remains almost the same as during the summer months.

We believe that comfort should go hand in hand with safety. If you have ever burned your hand on a radiator, you'll know that it's something to avoid. Thankfully, our radiators remain safe to touch, operating at the ideal temperature for personal comfort at all times.

- Remains safe to touch.
- Prevents dust burning - no odour, no residue.



Conversion

PANEL RADIATORS - CONVERSION TABLE EN 442 - APPROXIMATE EMISSIONS

ST	ROT	RT	25	30	35	40	45	50	55	60	65	70	75	80	85
90	24	4,56	2,45	1,88	1,57	1,36	1,21	1,10	1,01	0,93	0,87	0,82	0,77	0,73	
	22	3,11	2,11	1,69	1,44	1,27	1,14	1,04	0,96	0,89	0,83	0,78	0,74	0,70	
	20	2,50	1,87	1,54	1,33	1,19	1,07	0,98	0,91	0,85	0,80	0,75	0,71	0,67	
	18	2,13	1,68	1,42	1,24	1,11	1,01	0,93	0,87	0,81	0,76	0,72	0,68	0,65	
	15	1,76	1,46	1,26	1,13	1,02	0,93	0,87	0,81	0,76	0,72	0,68	0,64	0,61	
12	1,51	1,29	1,14	1,03	0,94	0,87	0,81	0,76	0,71	0,67	0,64	0,61	0,58		
85	24	1,93	2,63	2,00	1,67	1,45	1,29	1,16	1,07	0,99	0,92	0,86	0,81		
	22	3,34	2,26	1,80	1,53	1,34	1,21	1,10	1,01	0,94	0,88	0,82	0,78		
	20	2,67	1,99	1,64	1,41	1,25	1,13	1,04	0,96	0,89	0,84	0,79	0,75		
	18	2,27	1,78	1,50	1,31	1,18	1,07	0,98	0,91	0,85	0,80	0,75	0,72		
	15	1,87	1,54	1,33	1,19	1,07	0,98	0,91	0,85	0,80	0,75	0,71	0,67		
12	1,60	1,36	1,20	1,08	0,99	0,91	0,85	0,79	0,75	0,70	0,67	0,64			
80	24	5,38	2,83	2,15	1,78	1,54	1,37	1,24	1,13	1,05	0,97	0,91			
	22	3,61	2,42	1,93	1,63	1,43	1,28	1,16	1,07	0,99	0,93	0,87			
	20	2,87	2,12	1,75	1,50	1,33	1,20	1,10	1,01	0,94	0,88	0,83			
	18	2,42	1,90	1,60	1,39	1,24	1,13	1,04	0,96	0,90	0,84	0,79			
	15	1,99	1,64	1,41	1,25	1,13	1,04	0,96	0,89	0,84	0,79	0,75			
12	1,69	1,44	1,27	1,14	1,04	0,96	0,89	0,83	0,78	0,74	0,70				
75	24	5,90	3,07	2,32	1,92	1,66	1,47	1,32	1,21	1,12	1,04				
	22	3,92	2,61	2,07	1,75	1,53	1,37	1,24	1,14	1,05	0,98				
	20	3,10	2,28	1,87	1,61	1,42	1,28	1,17	1,08	1,00	0,94				
	18	2,61	2,03	1,70	1,48	1,32	1,20	1,10	1,02	0,95	0,89				
	15	2,12	1,75	1,50	1,33	1,20	1,10	1,01	0,94	0,88	0,83				
12	1,80	1,53	1,34	1,21	1,10	1,01	0,94	0,88	0,82	0,78					
70	24	6,54	3,36	2,52	2,08	1,79	1,58	1,42	1,30	1,19					
	22	4,30	2,84	2,24	1,89	1,64	1,47	1,33	1,22	1,13					
	20	3,38	2,47	2,01	1,73	1,52	1,37	1,25	1,15	1,07					
	18	2,82	2,19	1,83	1,59	1,42	1,28	1,17	1,08	1,01					
	15	2,28	1,87	1,61	1,42	1,28	1,17	1,08	1,00	0,94					
12	1,93	1,63	1,43	1,28	1,16	1,07	0,99	0,93	0,87						
65	24	7,32	3,70	2,76	2,27	1,94	1,71	1,54	1,40						
	22	4,75	3,11	2,44	2,05	1,78	1,58	1,43	1,31						
	20	3,70	2,69	2,19	1,87	1,64	1,47	1,34	1,23						
	18	3,07	2,37	1,98	1,17	1,52	1,37	1,26	1,16						
	15	2,47	2,01	1,73	1,52	1,37	1,25	1,15	1,07						
12	2,07	1,75	1,53	1,37	1,24	1,14	1,05	0,98							
60	24	8,32	4,13	3,06	2,50	2,13	1,87	1,68							
	22	5,32	3,44	2,69	2,24	1,94	1,73	1,56							
	20	4,10	2,96	2,39	2,03	1,78	1,60	1,45							
	18	3,38	2,59	2,15	1,86	1,65	1,48	1,35							
	15	2,69	2,19	1,87	1,64	1,47	1,34	1,23							
12	2,24	1,89	1,64	1,47	1,33	1,22	1,13								
55	24	9,62	4,67	3,43	2,78	2,37	2,07								
	22	6,03	3,87	2,99	2,48	2,15	1,90								
	20	4,60	3,29	2,64	2,24	1,96	1,75								
	18	3,75	2,86	2,36	2,03	1,80	1,62								
	15	2,96	2,39	2,03	1,78	1,60	1,45								
12	2,44	2,05	1,78	1,58	1,43	1,31									
50	24	11,38	5,39	3,92	3,15	2,67									
	22	6,97	4,39	3,37	2,79	2,40									
	20	5,23	3,70	2,96	2,50	2,17									
	18	4,22	3,19	2,63	2,25	1,98									
	15	3,29	2,64	2,24	1,96	1,75									
12	2,69	2,24	1,94	1,73	1,56										
45	24	13,93	6,38	4,58	3,65										
	22	8,26	5,11	3,89	3,19										
	20	6,08	4,25	3,37	2,83										
	18	4,84	3,63	2,96	2,53										
	15	3,70	2,96	2,50	2,17										
12	2,99	2,48	2,15	1,90											
40	24	17,93	7,87	5,54											
	22	10,16	6,14	4,62											
	20	7,28	5,01	3,93											
	18	5,68	4,21	3,41											
	15	4,25	3,37	2,83											
12	3,37	2,79	2,40												
35	24	25,15	10,36												
	22	13,27	7,76												
	20	9,12	6,14												
	18	6,91	5,04												
	15	5,01	3,93												
12	3,89	3,19													
30	24	42,40													
	22	19,37													
	20	12,34													
	18	8,89													
	15	6,14													
12	4,62														

example of a conversion to another system than $\Delta T 50$

You require 2150 Watt for a bathroom at 24 °C in 90/70. In the table you see 90/70/24 for 0,87. You look in the Technical price list for $\Delta T 50$ with a radiator in the vicinity of 1871 W.

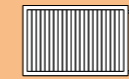
possible solutions

			75/65/20	90/70/24
11	750	1650	1959 W	2252 W
21S	600	1350	1821 W	2093 W
22	400	1350	1804 W	2074 W
33	450	900	1904 W	2189 W

approximate N-value = 1,30

ST: supply temperature (°C) | ROT: room temperature (°C) | RT: return temperature (°C)

COMPACT



HEIGHT
300, 400,
450, 500,
600, 750,
900 mm

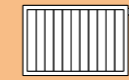
LENGTH
450 - 3000 mm

TYPE
KMP 11, 21S,
22, 33

COLOURS
RAL 9016
White. Other
colours
on request.



INTEGRA



HEIGHT
300, 400,
450, 500,
600, 750,
900 mm

LENGTH
450 - 3000 mm

TYPE
INT 11, 21S,
22, 33

COLOURS
RAL 9016
White. Other
colours
on request.



PLANORA



HEIGHT
300, 400,
500, 600,
900 mm

LENGTH
500 - 3000 mm

TYPE
PLAN 11, 21S,
22, 33

COLOURS
RAL 9016
White. Other
colours
on request.



PARADA



HEIGHT
300, 400,
500, 600,
750, 900 mm

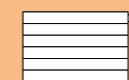
LENGTH
450 - 1650 mm
(+ longer
lengths
depending
on type)

TYPE
PAR 11, 21S,
22, 33

COLOURS
RAL 9016
White.
Other RAL
colours and
metallic
colours on
request.



RAMO



HEIGHT
300, 400,
500, 600,
750, 900 mm

LENGTH
450 - 1650 mm
(+ longer
lengths
depending
on type)

TYPE
RA 11, 21S,
22, 33

COLOURS
RAL 9016
White.
Other RAL
colours and
metallic
colours on
request.



KOS H



HEIGHT
400, 600,
750, 900 mm

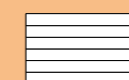
LENGTH
450 - 1950 mm

TYPE
KOH 20, 21,
22, 33

COLOURS
RAL 9016
White.
Other RAL
colours and
metallic
colours on
request.



FARO H



HEIGHT
400, 600,
750,