

Power-teK® RL 220

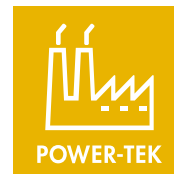
FULL INSULATION POWER WITH FEWER LAYERS



A lightweight insulation solution with strong thermal performance for tanks and vessels.

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POWER-TEK® RL 220 MAT FOR INSULATION OF TANKS AND VESSELS



Power-teK® RL 220 is a lightweight Glass Mineral Wool mat. It is one of the best solutions for insulation of heat storage tanks, hot water tanks and other vessels that have a limited demand for service temperatures but require strong thermal performance throughout thicker insulation layers. It is usually used outdoors underneath additional cladding (weather protection).

With thicknesses up to 300mm per layer, Power-teK® RL 220 delivers a cost effective and fast solution using reduced number of layers.

Power-teK® RL 220 is produced with **ECOSE® Technology**, a patented binder system based entirely on renewable raw materials.

PERFORMANCE

Maximum service temperature	220 °C (EN 14706)
Reaction to fire	A1 (EN 13501-1)
Density	ca. 22 kg/m ³ (EN 1602)



STANDARD FORMATS AND WEIGHT

Power-teK® RL 220 is supplied in rolls of different lengths, depending on thickness:

	dimension mm	roll	weight/roll (kg)	weight per sqm (kg/m ²)
Power-teK® RL 220	100 x 1200 x 5400	24	13,6	2,2
	140 x 1200 x 3900	24	13,6	3,1
	150 x 1200 x 3600	24	13,6	3,3
	200 x 1200 x 2700	24	13,6	4,4
	250 x 1200 x 2900	18	18,3	5,5
	300 x 1200 x 2400	18	18,1	6,6

Applications



Certifications



POWER-TEK® RL 220 IS PRODUCED WITH ECOSE® TECHNOLOGY.

Knauf Insulation Mineral Wool products with ECOSE® Technology benefit from a no-added formaldehyde binder made from rapidly renewable bio-based materials instead of petroleum-based chemicals.



TECHNICAL DATA

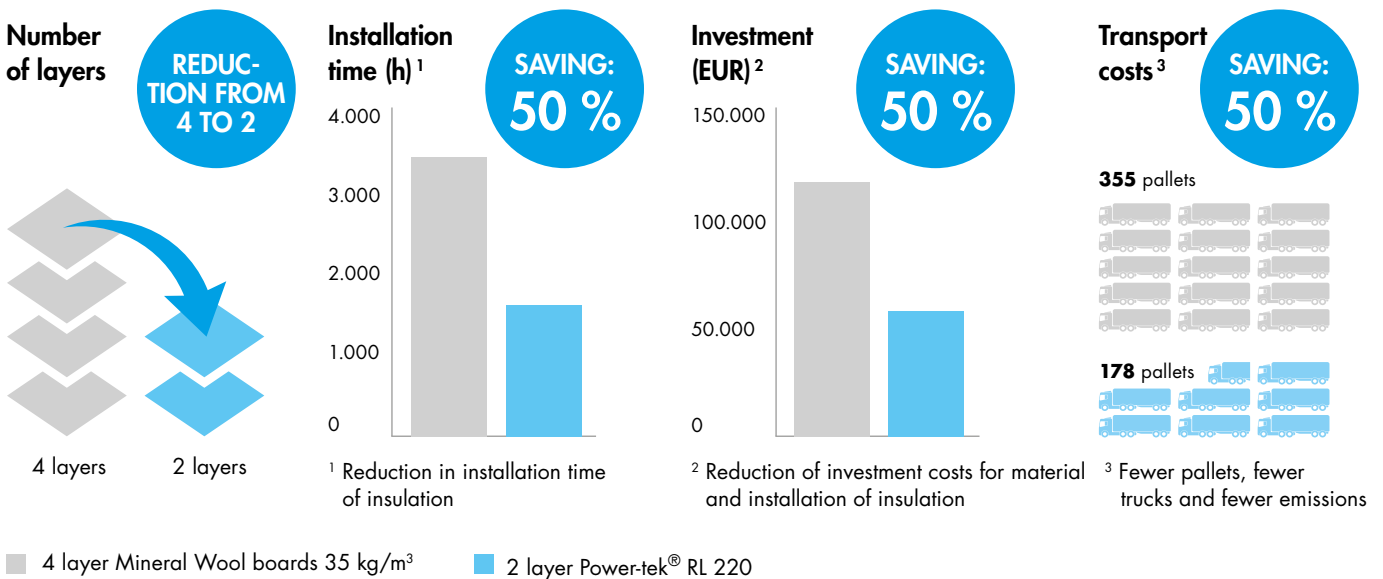
Description	Sign	Description/data				Unit	Standard
Thermal conductivity depending on temperature	9	10	50	100	150	°C	DIN EN 12667
		0,034	0,042	0,054	0,067	W/(mK)	
Total water absorption	λ	≤ 1				kg/m ²	EN 1609
Water vapour diffusion resistance	W_p	1				-	EN 14303
Longitudinal air flow resistance	η	≥ 5				kPa*s/m ²	EN 29053
Designation code	-	MW- EN 14303-T2-ST(+)-220-WS1				-	EN 14303

MULTIPLE BENEFITS OF KNAUF INSULATION POWER-TEK® RL 220 IN TANKS:

Characteristics	Reduction in number of insulation layers installed	Reduction of working time by up to 50%	Optimization of logistics due to compressed product packaging	Low weight of mats (packed) on site	Light and user-friendly solution	Sustainable
Main benefits						

Main benefits: = good performance, = cost savings, = time savings, = easy and fast handling, = ecological

DETAILS ON BENEFITS *



* Calculations are based on a case study with a technical requirement of 500mm insulation thickness. Market prices and construction principles in different markets may influence final calculations.



FAST AND ECONOMIC

Power-tek® RL 220 can be installed in thicknesses of up to 300mm in a single layer. Compressible and flexible, it can be installed between vessel surfaces and supporting structure elements.

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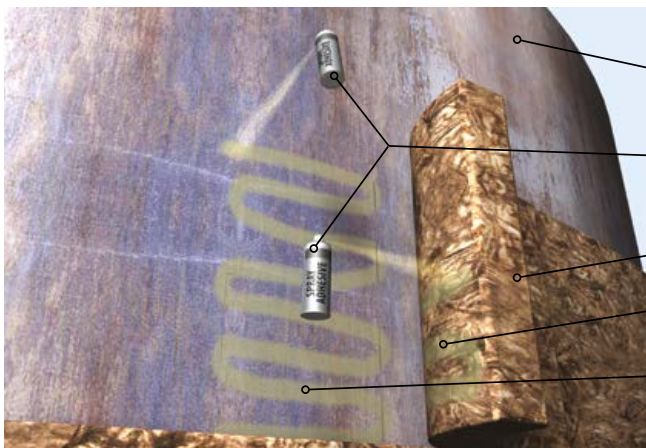
Fixing methods may vary depending on onsite conditions, established procedures used by installers or other preconditions.

Depending on the size of the tank or vessel to be insulated and the specified insulation thickness (one layer vs multilayer) various installation techniques can be chosen:

1

FIXATION WITH ADHESIVE

Fixation of the Power-teK® RL 220 mats with adhesive (e.g. spray adhesive) is usually used for smaller vessels and single layer installations. This is a very quick and easy method, also suitable for quick fixing of the mats before a mechanical clamping.

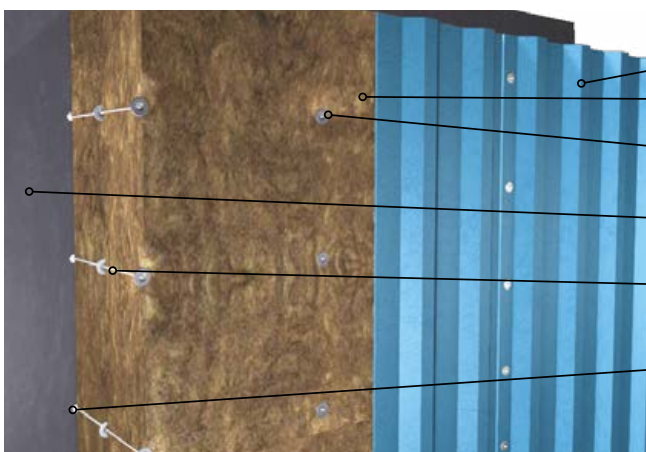


- 1 - Vessel/tank surface
- 2 - Spray adhesive
- 3 - Power-teK® RL 220 Mineral Wool mat
- 4 - Adhesive applied on the Power-teK® RL 220 Mineral Wool mat
- 5 - Adhesive applied on the vessel/tank surface

2

INSTALLATION USING PINS & CLIPS

This method requires the installation of the welding pins first. The Power-teK® RL 220 Mineral Wool mats are hung on the pins and secured with clips to provide precise and secure fixation. For multilayer installation, long pins are used.



- 1 - Cladding
- 2 - Power-teK® RL 220 Mineral Wool mat
- 3 - Clips
- 4 - Vessel/tank surface
- 5 - Pin
- 6 - Welding

3

CLAMPING OR SQUEEZING BETWEEN METAL SUPPORT CONSTRUCTIONS

Power-teK® RL 220 mats are squeezed between the support rings, which are normally fixed on the tank as a basic construction for installation of trapezoidal sheet metal or other types of façade elements. The Mineral Wool mats are usually attached with vertical metal rods as shown on the picture.



- 1 - Vessel/tank surface
- 2 - Distance rings
- 3 - Metal rods
- 4 - Power-teK® RL 220 Mineral Wool mat

4

TENSION BELTS OR STRAPS

This method allows Power-teK® RL 220 Mineral Wool mats to be applied either with or without adhesive, using the support construction for fixation. Belts and straps are applied circumferential or as local / diagonal supports between other construction elements.



- 1 - Vessel/tank surface
- 2 - Metal construction
- 3 - Tension belts/straps
- 4 - Power-teK® RL 220 Mineral Wool mat

GOOD TO KNOW

A certain level of sagging, caused by gravity, might occur. This must be accounted for at the planning and procurement stage as sagging could cause the width of the product to reduce over time, outside of the technical requirements.

Before choosing the installation method, the following observations, arising from the weight of insulation material, should be considered:

- e.g. sagging of 4% means 1152mm width after installation instead of the 1200mm of the delivered product
- effects can be limited through use of support rings

CASE STUDY: INSULATION OF HEAT STORAGE TANKS IN SWITZERLAND



Küssnacht



Schwyz

In 2020, Bilfinger Industrial Services Schweiz AG refurbished two district heating storage systems in Schwyz and Küssnacht for the future-oriented Swiss energy suppliers AGRO Energie Schwyz AG and AGRO Energiezentrum Rigi AG. A Knauf Insulation Mineral Wool insulation layer totaling 400mm (2x 200mm) was installed like a thick wool sweater. Both heat storage tanks walls were insulated with Power-teK® RL 220, a Mineral Wool mat that, in addition to its good insulation properties, is also characterized by its low weight, which makes processing easier.

PROJECT SPECIFICATION:

	Küssnacht	Schwyz
Storage height with attic	44 m	52 m
Storage diameter including insulation	25 m	30 m
Roof insulation (3-layer overall insulation)	1,500 m ²	2,200 m ²
Sheath insulation Mineral Wool	2 x 200 mm	2 x 200 mm
Overall insulation	7,000 m ²	11,000 m ²
Trapezoidal sheet metal cladding overall	4,200 m ²	5,600 m ²



SUMMARY As light weight Mineral Wool slabs, Power-teK® RL 220 can ensure very thick insulation installed in fewer layers. The product provides perfect material consistency as well as a constantly high level of insulation performance, saving costs throughout the whole process chain, including logistics. The overall sustainable approach provides an additional benefit.

TIPCHECK ENERGY AUDITS

RECOGNISE UNEXPECTED SAVINGS
POTENTIAL: APPLY FOR TIPCHECK AUDIT

Industry experience shows that in a typical European plant 10–19% of insulation is damaged or missing.

As many as three out of four TIPCHECK clients immediately invest or plan to invest in the recommended insulation solutions after a TIPCHECK audit. Taking into the account the very short payback periods, the improved insulation is a very attractive investment.

Perfectly equipped to tackle all insulation challenges, we at Knauf Insulation take part in various incentive schemes to recognise and push potential savings. Participate and co-create your new greener environment. Apply for a TIPCHECK audit and get ahead of the competition and in line with the 2050 net-zero EU agenda at the same time.

Our **certified TIPCHECK auditors** will help you to recognise the savings potential of your plant.

[APPLY HERE:](#)



Insulation of one industrial valve

DN: 150

Working temperature: 150°C

Saving potential in one year:

10.000 kWh = 900 m³ Gas

Insulation costs: 250 - 300 EUR

Amortization time: < 1 year

Insulation of one HVAC valve

DN: 150

Working temperature: 90°C

Saving potential in one year:

4.600 kWh = 415 m³ Gas

Insulation costs: –ca. 166 EUR

Amortisation time: ca. 1,5 year

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Our products save energy, cut emissions and are designed to make sure buildings and applications are good for the environment and keep people healthy, safe and well. Across our company, we have been working on sustainability for over a decade. We have focused on zero harm, reducing our energy use and emissions, recycling our production waste, incorporating circular economy principles and constantly campaigning for better and more sustainable buildings and applications. Over the past decade, we have achieved great things and we are proud of how we have changed our company, helped our colleagues, communities and customers and reduced our impact on the environment. But sustainability is a process of continuous improvement. We must do more for our people and our environment. That's why we've created our new sustainability strategy. We call the new strategy 'For A Better World' because it builds on the success of our mission statement: "Our vision is to lead the change in smarter insulation solutions for a better world."



LIVING WITH A GREEN HEART

The "Living with a Green Heart" initiative promotes a comprehensive approach to sustainable development with **emphasis on societal and social sustainable development**, placing an informed individual at the forefront of sustainable transformation of society. "Living with a Green Heart" presents a unique story and approach that encourages companies, organisations, and individuals to:

- ✓ Create sustainable products and solutions which can transform grey cities into green oasis, build safe and comfortable homes and lead to a better world for all of us.
- ✓ Lead social sustainability actions, cocreating a more informed and kinder future for ourselves and those that come after us.
- ✓ Build a friendlier and more responsible environment for employees at all levels and in all aspects, appreciating the diversity and improving our relationships, as well as the way we work, collaborate, and coexist within our environments.

CONTACTS

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 OUR WEBSITE WWW.KNAUFINSULATION-TS.COM/



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COMPANY PROFILE

Knauf Insulation is one of the most respected names in the insulation industry worldwide with over 40 years of experience and still growing fast. Over 5.500 employees in more than 40 countries and 27 manufacturing sites. Being part of the family-owned Knauf group, Knauf Insulation Technical Solutions provides solutions for customers' requirements in industry, marine applications, heating, ventilation and air conditioning. A profound market understanding and insulation know-how enables us to provide a broad range of products to meet your specific needs.

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