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Environmental Experts.

E-PLATE

Wastewater Cooling with Energy Recovery – Efficient, Sustainable, Future-Oriented

Thanks to our innovative technology, the E-PLATE offers a wide range of applications in various industries, from paper to food.

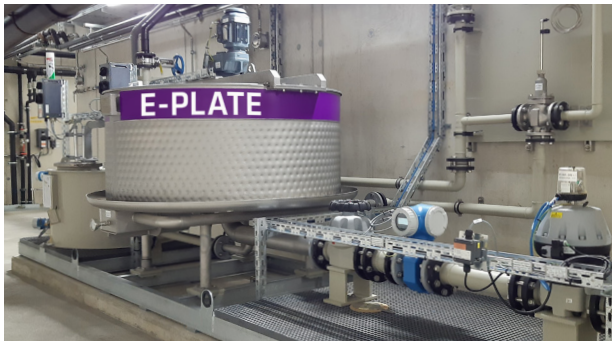
For effective wastewater treatment, water temperature plays a crucial role at various stages of the treatment process. For example, too cold partial flows are a challenge for anaerobic reactors, as bacteria require a minimum temperature for their metabolism. If water enters the biological treatment stage too warm, it can have a negative impact on the biological processes.

In the past, cooling towers and falling film coolers were common solutions for cooling process water. But why waste valuable heat energy? With an E-PLATE heat exchanger, wastewater can be cooled while simultaneously increasing the energy and operational efficiency of the plant.

E-PLATE – The Heat Exchanger for Solids-Laden Wastewater

The E-PLATE provides efficient cooling and heat recovery at all stages of your wastewater treatment process – both in the raw water influent and in the treated effluent. This allows you to maximise the benefits of your system.

Our engineers look forward to advising you on optimising wastewater heat recovery for maximum energy efficiency and operational performance.



Heat Exchanger in a Wastewater Treatment Plant Inflow

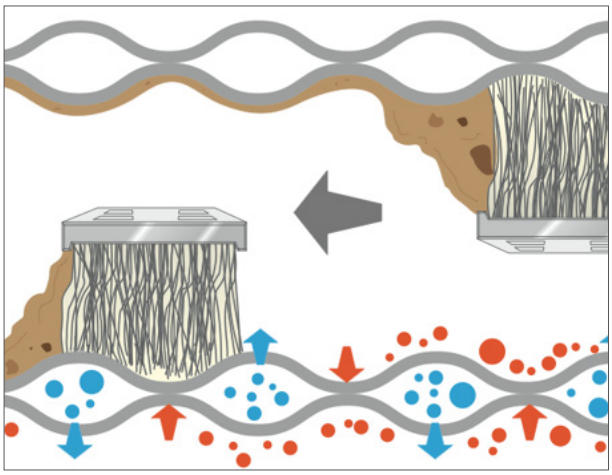
Your Benefits at a Glance – Why E-PLATE?

- Permanent self-cleaning: Reduces maintenance costs and prevents blockages.
- Low pressure drop: Ensures smooth operation.
- Easy to retrofit: Ideal for existing and new systems.
- Suitable for solids-laden effluent: Reliable performance even in difficult conditions.
- Durable and robust: High-quality materials ensure a long service life.
- Higher energy efficiency: Utilises wastewater heat and reduces energy consumption.

Functionality

The E-PLATE works with a free flow gradient. It consists of annular, double-walled stainless steel plates through which fresh water flows evenly. Wastewater flows through the gaps between the plates. A rotating brush system continuously cleans the plates and ensures turbulence in the wastewater. This guarantees efficient heat transfer even at low flow rates and prevents sediment build-up.

The self-cleaning feature significantly enhances the performance of the E-PLATE, making it suitable even for highly contaminated wastewater.



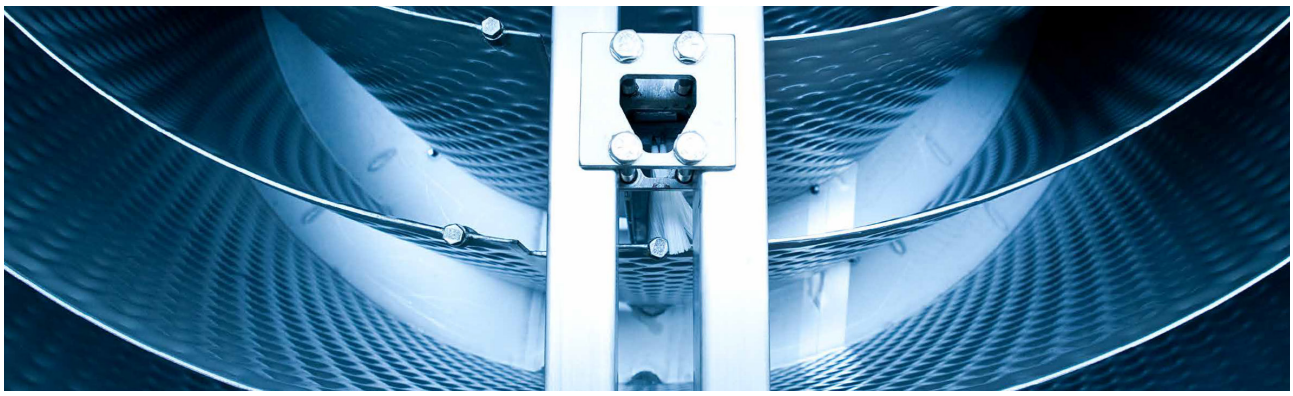
Double-Walled Stainless Steel Plates with Rotating Brush System

Technical Highlights

- Low pressure loss with free-flow operation.
- Available in nine sizes.
- Material selection based on wastewater composition (e.g., stainless steel 1.4404).

Industries that benefit from E-PLATE Technology:

- Paper industry
- Wastewater management
- Food industry
- Textile industry
- Industrial laundries
- Public swimming pools
- Petrochemical industry
- Heat recovery from biomass or sludge



E-Plate Top View

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High-Efficiency Application

Our E-PLATE heat exchanger can be integrated into the planning of a new wastewater treatment plant from the outset or retrofitted to optimise existing systems.

A video shows the operation and integration of the E-PLATE heat exchanger in a paper industry wastewater treatment plant.

Video: youtube.com/watch?v=fLUnnNSdfus

Sizes and Flow Rate Capacities

The E-PLATE is available in nine sizes. The material selection can be customised based on wastewater composition, with high quality stainless steel 1.4404 commonly used. Custom designs are also available.

Rings	Hight (mm)	Heat Transfer Area (m²)	Flow Rate Min m³/h	Flow Rate Max m³/h	Heat Output-Min (kW)	Heat Output Max (kW)	Electrical Power (kW)	Outside Diameter (mm)	Total height (mm)	Model
3	500	6,90	5,00	20,00	20,00	60,00	0,55	1.300,00	1.700,00	H500R3
4	500	11,25	5,00	20,00	30,00	90,00	0,75	1.700,00	1.700,00	H500R4
4	1.000	22,50	15,00	30,00	60,00	150,00	0,75	1.700,00	2.200,00	H1000R4
5	1.000	32,60	20,00	35,00	75,00	180,00	1,50	1.900,00	2.200,00	H1000R5
6	1.000	44,50	25,00	40,00	90,00	200,00	1,50	2.200,00	2.200,00	H1000R6
5	1.250	40,70	30,00	60,00	200,00	450,00	1,50	1.900,00	2.500,00	H1250R5
6	1.250	55,60	40,00	75,00	250,00	550,00	1,50	2.200,00	2.500,00	H1250R6
6	1.500	47,00	60,00	125,00	600,00	1.300,00	2,20	2.200,00	2.800,00	H1500R6
7	1.500	64,42	70,00	125,00	650,00	1.500,00	2,20	2.400,00	2.800,00	H1500R7

Qhy = Hydraulic Flow Rate
Ptherm = Thermal Power
Pel = Electrical Power Consumption
Da = Outer Diameter
Hges= Total High

We Calculate Your Energy Saving Potential

Our experts will gladly calculate the energy saving potential hidden in your wastewater.
Simply provide us with the following five values: the flow rate, inlet temperature, and desired outlet temperature of your wastewater, and the flow rate and inlet temperature of your cooling water.

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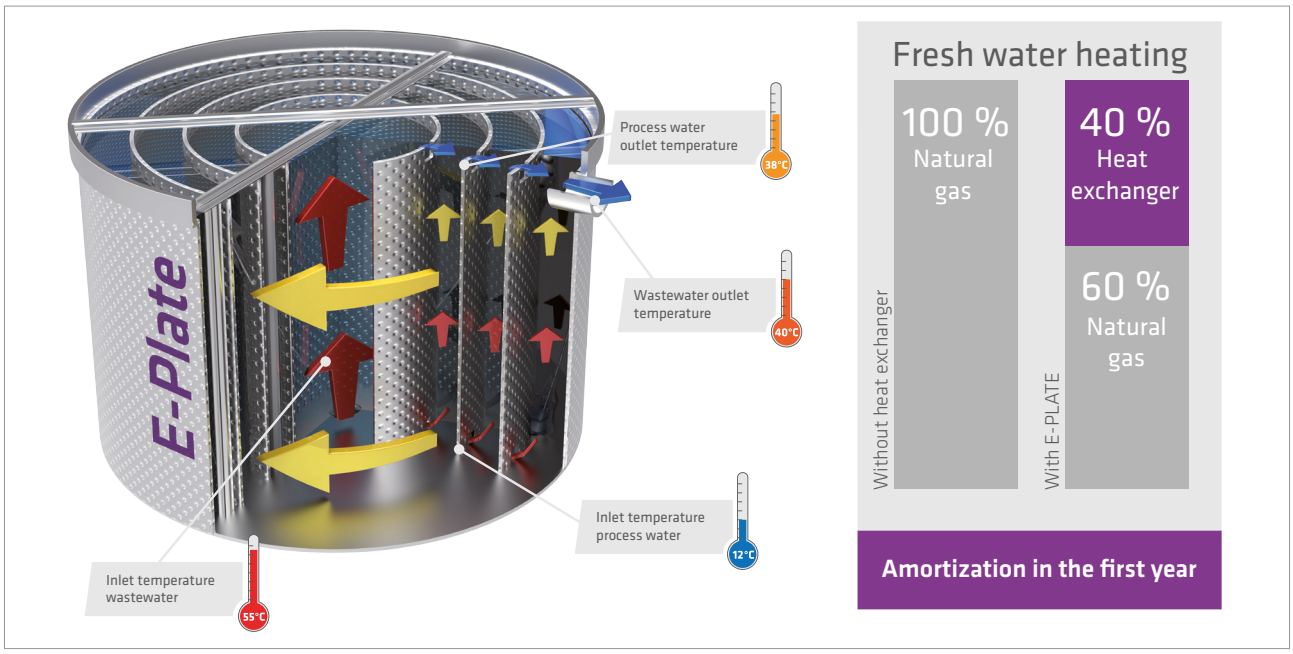
Practical Example of the Use of an **E-PLATE** in the Paper Industry



The infographic uses a paper mill as an example. The process water supplied at the start of production is too cold at 12° Celsius and needs to be heated. At the end of the process, the wastewater has a temperature of 55° Celsius, which is too high for the installed biological wastewater treatment system. As a result, the treatment plant cannot function properly because the microorganisms die off.

Using an E-PLATE solved both problems:
Result: 40% reduction in natural gas consumption for hot water.
Investment: Payback within the first year.

It is not only paper mills that have problems with water temperature at the outlet. Such a system is also worthwhile for operators of **biogas plants, foundries and hardening plants, dye works, industrial laundries** and the **food industry**.

Contact Us!

Take advantage of the E-PLATE and make your wastewater treatment more energy-efficient.
Our experts are available for individual consultation.

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