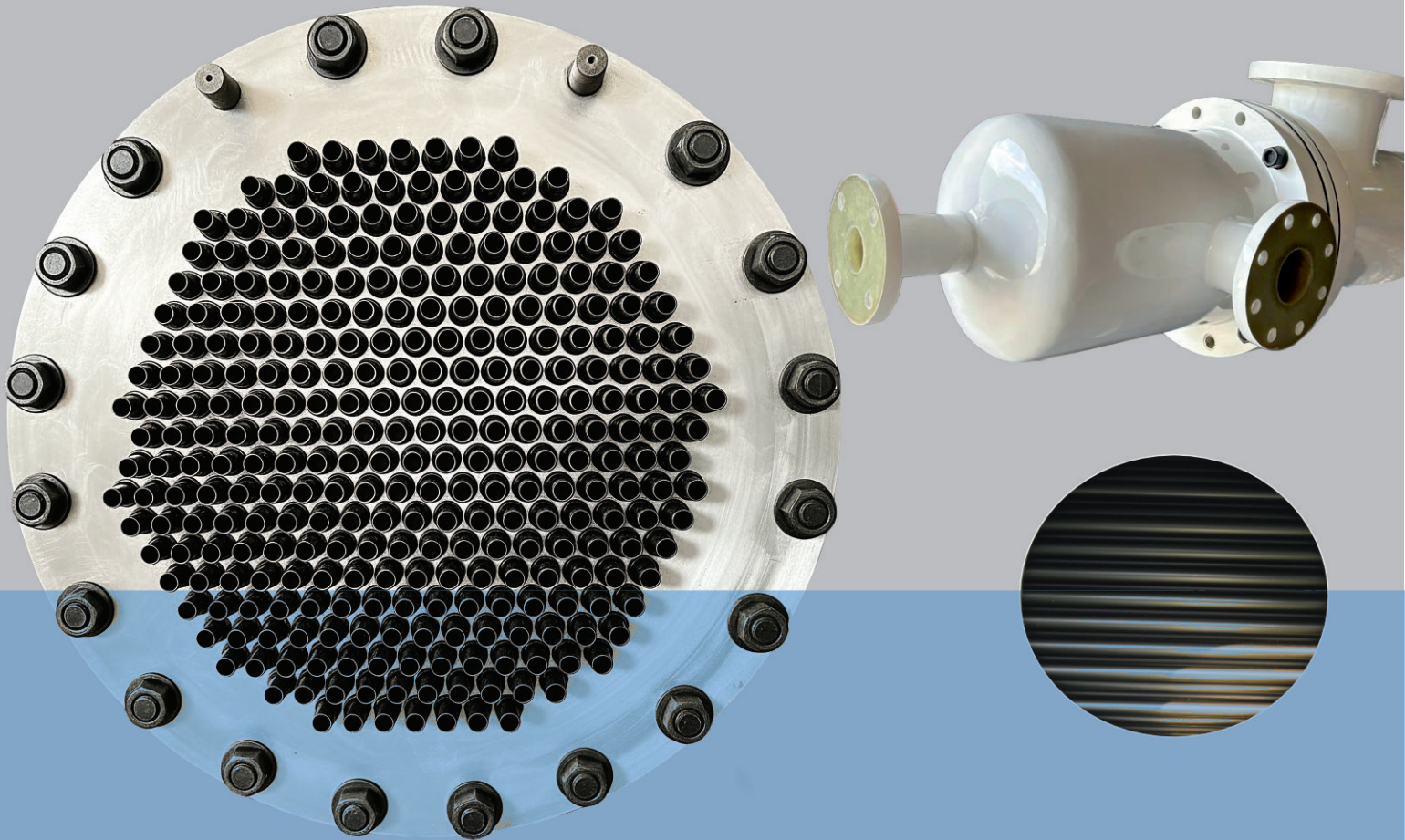




ADVANCED MATERIALS, EXCEPTIONAL STABILITY



SHELL & TUBE TECHNOLOGY

HIGH PERFORMANCE POLYMER ADVANCED GRAPHITE

DESIGNED IN GERMANY

Engineered for highly corrosive, high-duty heat transfer applications

Heat exchangers are among the most critical and failure-sensitive equipment in chemical, pharmaceutical, and metal processing plants. When exposed to aggressive chemistries, high temperatures, and cyclic operating conditions, conventional metallic and graphite exchangers often suffer from corrosion, fouling, leakage, and premature mechanical failure — leading to unplanned shutdowns, contamination risk, and high lifecycle cost.

Concord Enviro H-Xtreme™ Heat Exchangers are purpose-engineered to address these challenges through an advanced **high-performance polymer reinforced with graphite (HPP)** tube technology, delivering superior corrosion resistance, thermal performance, and long-term reliability.



THE CHALLENGE WITH CONVENTIONAL HEAT EXCHANGERS

In corrosive process environments, traditional heat exchanger materials face inherent limitations:

- ✧ **Metallic heat exchangers** are prone to corrosion, pitting, and stress cracking
- ✧ **Impervious graphite exchangers** are brittle, heavy, and vulnerable to mechanical shock
- ✧ **Glass and glass-lined systems** are constrained by pressure limits and fragility

These limitations often result in:

- ✧ Reduced heat transfer efficiency over time
- ✧ High maintenance and replacement costs
- ✧ Operational risk during thermal or pressure cycling

THE H-Xtreme™ SOLUTION

Concord Enviro H-Xtreme™ heat exchangers use **imported HPP tubes** manufactured from **high-performance polymer reinforced with graphite**, combining the best properties of both materials:

- ✧ Corrosion resistance comparable to graphite
- ✧ Mechanical resilience and shock resistance superior to graphite
- ✧ Thermal efficiency competitive with metallic materials
- ✧ Significantly lower fouling tendency

This results in a **compact, lightweight, and highly durable shell-and-tube heat exchanger** designed for aggressive chemical environments and demanding operating conditions.

KEY FEATURES & PERFORMANCE HIGHLIGHTS

- ✧ Nominal diameters upto **DN 700**
- ✧ Heat transfer area ranging upto **75 m²**
- ✧ Excellent resistance to **thermal and mechanical shock**
- ✧ **Modular design** with proprietary sealing system
- ✧ Completely **repairable on site** using common tools
- ✧ Lightweight construction for easier handling and installation
- ✧ Resistant to fouling; smooth tube surface enables easy cleaning
- ✧ Longer operating life and **lower maintenance cost** than metallic or graphite alternatives

Assembly, installation, and after-sales support are provided by **Concord Enviro**, ensuring end-to-end accountability.

OPERATING ENVELOPE – TUBE OPTIONS

TUBE TYPE	DESIGN TEMPERATURE	DESIGN PRESSURE
HPP-1	-100 °C to +250 °C	-1 to +6 bar g
HPP-2	-30 °C to +90 °C	-1 to +6 bar g

For applications outside standard limits, **custom-engineered solutions** are available based on specific process parameters.

CORROSION & CHEMICAL RESISTANCE

HPP tube technology has been rigorously tested in highly corrosive media at elevated temperatures, demonstrating excellent resistance without material degradation — unlike conventional metallic tubes.

Medium		Concentration	Test Temp
Water	Seawater	>6.5% to (Sat.)	80°C
Acid / Alkali	Hydrochloric acid (HCl)	< 32%	100°C
	Sulfuric acid (H ₂ SO ₄)	< 70%	140°C
	Phosphoric acid (H ₃ PO ₄)	< 85%	156°C
	Hydrofluoric acid (HF)	< 40%	100°C
	Sodium Hydroxide	72% (Sat.)	23°C
Mixed Acid As per DIN EN 1447	HCL (NaOH)	0.003%	90°C
	H ₂ SO ₄	0.02%	
	HNO ₃	0.04%	

HPP tubes are suitable for 0-14 pH,
Compatibility testing of actual process fluids is strongly recommended at the Concord Enviro laboratory.

U-VALUE CHART

APPLICATIONS	W/m ² K	Kcal/ hm ² K
Water- Water	600-1800	516-1548
Liquid -Water vapours	850-1800	731-1548
Liquid -Organic vapours	500-1200	430-1032



CONFIGURABLE CONSTRUCTION OPTIONS

Tube Materials

HPP-1 | HPP-2 | SiC

Shell & Header Options

- ✧ FRP
- ✧ Borosilicate Glass
- ✧ Glass-lined Steel
- ✧ Coated Steel



This modular construction ensures that **both process and utility sides** of the exchanger can be made fully corrosion-resistant while meeting pressure and temperature requirements.

WHY PLANTS CHOOSE H-Xtreme™

- ✧ Compact and lightweight compared to graphite and metal designs
- ✧ Higher reliability in cyclic and aggressive service
- ✧ Lower downtime and lifecycle cost
- ✧ On-site repairability reduces spares dependency
- ✧ Proven performance across diverse corrosive processes
- ✧ Delivery -standard model heat exchangers within 6-8 weeks

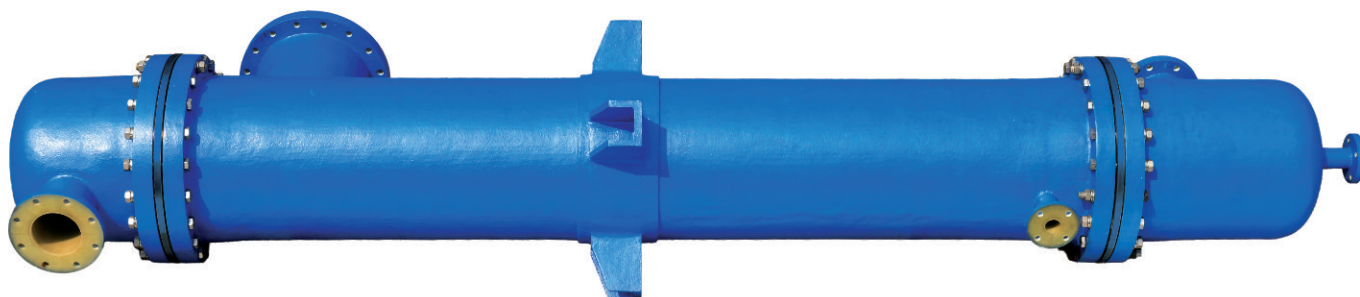
INDUSTRIES SERVED

- ✧ Chemicals & Specialty Chemicals
- ✧ Agrochemicals
- ✧ Petrochemical & Refining
- ✧ Pharmaceuticals (API)
- ✧ Metal Processing
- ✧ Environmental Applications
- ✧ Food & Beverages
- ✧ Distilleries



LET'S ENGINEER RELIABILITY INTO YOUR PROCESS

For standard models, custom configurations, or material compatibility studies, contact our engineering team.



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