



T. H. Industrial Solutions

HOW LONG DO HEAT EXCHANGER PLATES LAST?

The life of a heat exchanger plate varies greatly, typically lasting **10 to 20+ years** for plate-and-frame types with proper maintenance, but potentially only **8-12 years** for brazed units, while industrial units in harsh conditions might last only **4 years**, all depending heavily on operating conditions, fluid aggressiveness (corrosion), cleanliness, and regular servicing like gasket replacement.

Factors Influencing Plate Life:

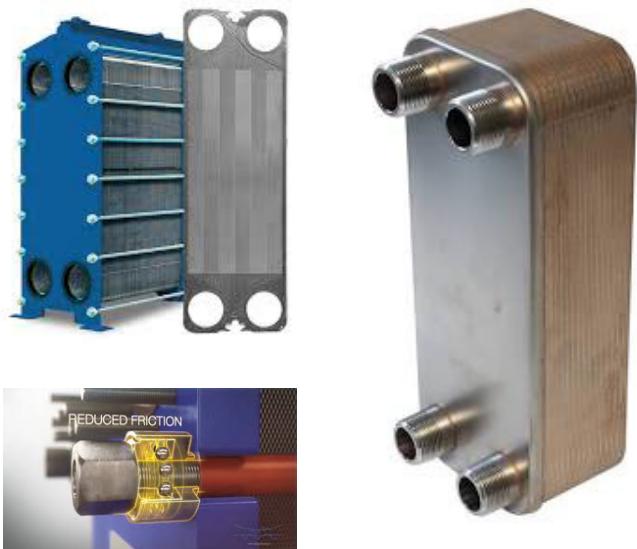
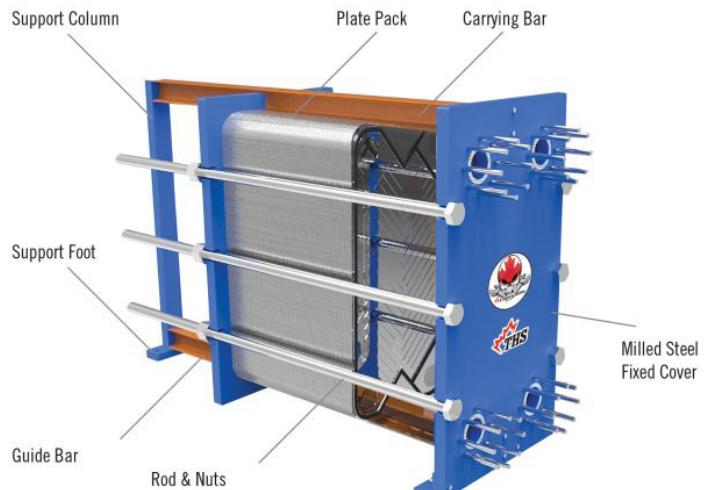
- Material Selection: Stainless steel grades (like 316L) and alloys (Titanium) resist corrosion better than standard 304 in aggressive fluids, extending life.
- Operating Conditions: High temperatures, pressures, and aggressive fluids (acids, abrasive slurries) accelerate wear and corrosion.
- Fouling/Scaling: Buildup of deposits reduces efficiency and increases pressure, forcing pumps to work harder, leading to potential damage.
- Maintenance: Regular cleaning (yearly or bi-yearly) and gasket replacement (every 3-5 years for gasketed units) are crucial.
- Application: A simple HVAC unit lasts longer than one in a demanding chemical process or polishing slurry application.

Typical Lifespans by Type:

- Gasketed Plate-and-Frame (PHEs): Often 10-20+ years, with gaskets replaced every few years.
- Brazed Plate Heat Exchangers (BPHEs): Generally 8-12 years, but corrosion can shorten this significantly.
- Industrial/Harsh Environments: Can see shorter lives, sometimes as low as 4 years due to abrasive or corrosive media.

When to Consider Replacement:

- Persistent leaks (internal or external).
- Significant loss of efficiency despite cleaning.
- High repair costs (e.g., frequent gasket replacements).
- Contamination between fluid streams (internal plate failure)



Health & Safety Accreditations



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Rolling New Gaskets



Dished Gasket Track

When a heat exchanger develops an internal or external leak, or if it needs to be cleaned, customers often ask how long do the plates last. Pressure, temperature, media, abrasion, plate/gasket material, thickness, spiking, water hammer, & differential pressure all effect the life of the plate. The older a plate, the higher the pressure the more the gasket track will dish.

As a general rule HVAC cooling HXs plates last 25-30 years, assuming 316SS, 0.6mm. If they are 0.4mm 2-6 years (since they are prone to stretching & deforming, we don't recommend servicing.

For industrial applications 2-10 years is typical.

On Boiler water or steam systems 10-15 years.

The OEMs design of the frame, pressure plate thickness, & plate hanger style also impact the life of the plate. Thicker pressure plates, the # & diameter of the tie rods, & Omega clip vs gusset style plate hangers also effect longevity.



Gasket Style



Omega Style



Gusset Style Plate

If the decision is to install a new plate pack, the following THS quality control procedures include:

- Each plate is checked with a Niton XL2 100G XRF analyzer gun to verify PMI (positive material identification)
- The plate thickness is conformed using calipers.
- All gaskets are visually checked for defects. A tug test is performed checking for weak areas.
- All gaskets are fully glued using 3M #1099 rubber adhesive. On high pressure/temperature applications, a two-part epoxy can be used.
- For quality control & tracking purposes, all plates are laser engraved with the job number.



Caliper Plate Thickness



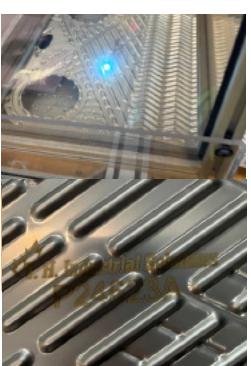
Applying Rubber Adhesive



Gasket Tug Test



Niton XL2 100G XRF



Laser Engraving