



Producing primary titanium for aerospace and defense

Commissioned in 1998 as the world's largest electron beam cold hearth furnace, ATI Richland Operations in Washington specializes in melting titanium and titanium alloys to meet our customers' extraordinary requirements, serving aerospace, defense and industrial markets.

Expanding Capabilities

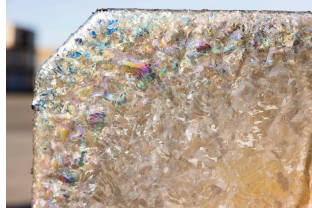
Through investment in new, state-of-the-art assets, ATI will essentially double the capacity of Richland Operations, upgrading its capabilities to produce premium quality titanium qualified for jet engines in addition to the standard quality titanium currently serving the airframe, defense and industrial markets.

The expansion adds:

Second Electron Beam Hearth (EB) furnace:

Known for its faster melt rates, EB melting operates in a vacuum to create titanium ingots.

Vacuum Arc Remelting (VAR) capability: Many OEM applications require a two-melt process to improve forgeability; on-site VAR improves process flow.



Benefits of the Expansion

Greater capability: Richland will produce premium quality titanium used in rotating disks in aero engines, a material in high demand, as well as standard quality.

Optimize assets: Allows use of the most efficient technology for specific product mixes.

Speed and flexibility: Process flexibility to utilize a full range of both recycled and prime materials to produce both premium and standard quality, depending on market need. Remelt furnace on-site improves process flow.

Quality: Extraordinary chemistry control, producing the highest quality titanium in the industry.



RICHLAND AT A GLANCE

What: Melting operations for titanium and titanium alloys

How: Electron beam (EB) furnace; Vacuum Arc Remelting (VAR)

Where: Richland, WA, where 25 of our 100 acres are used for manufacturing (the remainder are used for farming).

Who: Our engineers, operators and support staff are highly skilled in materials science and manufacturing.

When: Originally commissioned in 1998; expansion announced in 2023.

Producing Titanium Through Electron Beam Melting Process

Formulate

The process starts with a range of input materials: sponge, chips, recycled materials. Under very precise analysis, we formulate to exact specifications.

Blend

Materials are mixed to create the "charge" for melting and fed into the furnace.

Melt

Under mechanically driven vacuum, electron beams create the energy to liquefy the materials layer by layer.

Refining

The melt flows into refining hearths, removing defects with each pour.

Finishing

Ingots or rounds are produced to the customer's exact specifications. Final materials are 13 - 17' long and weigh between 17,500 - 44,000lbs.



RICHLAND OPERATIONS: Melt, clean melt.

Primary titanium in the form of round and rectangular inputs shipped to ATI locations for rolling, melting and forging.



Defect-Free Melt Delivers Extraordinary Quality

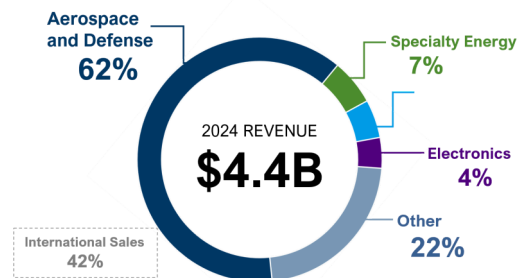
ATI's Specialty Materials business unit — of which Richland Operations is a part — produces advanced titanium and nickel alloys and powders. We are recognized by our customers as the leader in materials development and melting. We are on a journey to create defect-free melt, combining world-class assets with strict process controls.

It's a marketplace differentiator:

first-run quality reduces product cost, improves product cycle time, and increases usage of recycled materials.



ATI AT A GLANCE



Richland Ops is primarily powered by hydroelectricity, in keeping with ATI's goals of sustainable production.



Titanium melts at approximately 3,100°F, requiring the extraordinary power of electron beams.



Ingots weigh approximately 17,500 - 44,000lbs.



It takes approximately 6-10 hours to melt a titanium ingot, depending on chemistry and size.



Highly skilled electron beam operators show extreme focus and patience as they focus electron beam guns, targeting melt with precision.



Nearly 75% of our input materials are "revert," recycled from our processes across ATI. Richland's processes remove defects through the melt process, rescuing materials that would otherwise be scrapped.



ATI is an international company with **more than 7,000 employees** across 15 locations in Europe and Asia, and almost 30 in the United States.



Every decision we make and action we take is built on our shared commitment to ATI's Core Values:

Integrity
Safety & Sustainability
Accountability
Teamwork & Respect
Innovation