

Zirconium and Hafnium Specialty Metals Aerospace Industry

About Us

For more than a century, Stone & Webster has been among America's most iconic engineering, construction and industrial leaders. Now owned by the Westinghouse Electric Company, Stone & Webster provides advanced industrial solutions that draw upon the Westinghouse's vast range of technologies, products, and services.

Vertically integrated to ensure the supply of metals for nuclear power generation, the Westinghouse Western Zirconium (WZ) facility is a global leader in the production of high-purity Zirconium (Zr) and its elemental derivative, Hafnium (Hf).

Products for the Aerospace Industry

The Western Zirconium nuclear-grade metals are produced continuously in order to maintain the nuclear fuel supply that powers a substantial portion of the global electric grid. That quality, reliability, and availability inherent to the WZ zirconium and hafnium products provide a consistent supply of specialty metals.

These same attributes are imperative in aerospace applications where material integrity must be assumed. That is why WZ's zirconium and hafnium are trusted by leading metal alloyers and manufacturers of titanium, nickel, and cobalt. Our materials are integral parts of airframe structures and jet engine components. Hafnium has, and continues to be, an important element in the composition of exhaust systems for the industry's most powerful rocket systems.



Western Zirconium supplies metal manufacturers with forms of zirconium and hafnium that are alloyed as components of turbofan jet engines.

High Purity Product Forms

Zirconium

WZ's zirconium is produced with its inherent hafnium derivative – as well as other chemical elements – removed. The resulting high-purity Zr is available in a range of product types: flat strip coil, TREX tubing, bar (extrusions) and plate for structural applications. For processing and alloying, our Zr is also available in the forms of Sponge and Fines.

Hafnium

WZ's hafnium is derived through zirconium processing. Hafnium is available in multiple forms, with products including Hf Hydroxide and Hf Oxide, and Hf metals in the forms of Sponge, Bar Billet, and Ingots.



Zirconium being produced as flat strip coil (top left), TREX for tubing applications (top right), and hafnium sponge (bottom).

In common with most materials production facilities, WZ collects by-products from its extensive processing and product preparation. These materials have considerable value to metals processors and suppliers, and include Calcium Fluoride, Magnesium Chloride, Zr turnings, Zr plates, bar and tube ends, etc.

The Western Zirconium Facility

Since 1978, the Western Zirconium metal production facility located in Ogden, Utah has provided Zirconium and Hafnium-related products for nuclear power and other industrial uses like medical, aerospace, oil and gas, petrochemicals, and electronics. Guided by the policies and regulations that apply to global nuclear energy generation, the WZ facility operates within regulated quality compliance and requirements.



Situated near Utah's Great Salt Lake, the Western Zirconium plant is seen here in the foreground of the Wasatch Mountain Range.

Full-Service Metals Processing

In addition to producing world-class specialty metals products, the WZ facility operates unique processing systems that are available for toll processing. Our equipment systems include Electron Beam Melt furnaces, Vacuum Arc Remelt furnaces, Hot Forging, Large and Small Extrusion Presses, Hot Rolling and Cold Rolling operations, Vacuum Annealing furnaces and Bar processing equipment (e.g., Swaging, Centerless Grinding and Straightening).

The WZ facility has a long history of providing specialty metals material to the nuclear and medical industries through exceptional quality and rigor. Regardless of the form of metal required, WZ's Specialty Metals can propose a solution to meet the needs of the aerospace and aviation industries.



The zirconium ingots in the top left image can be shipped, as is, to customers. Others await further processing at WZ through many production techniques available— forging, extrusion, melting, rolling, chemical baths, annealing, lathing/cutting.

Enabling a New Era in Aerospace and Aviation

On the ground, in the sky or out in space, Western Zirconium specialty metals are positioned to support the growing demands of today's aerospace and aviation industries.



Rocket exhaust systems, the means of propulsion for space flight, endure tremendous forces and temperatures – precisely the mission that WZ Specialty Metals are designed to meet.