

Neutron Radiography for Turbine Engine Parts



[Neutron radiography](#), also known as neutron imaging or N-ray radiography, is an advanced non-destructive testing (NDT) technique that provides unprecedented insight into the integrity of turbine engine parts. At our [Applus+ NRAY](#) facilities, the inspection of cooling channels in turbine blades, and other air cooled components for residual core, is made possible with neutron imaging, based on tagging or doping methods that allow visualization of very small pieces of core inside metal castings. Additionally, neutron radiography provides unique abilities to visualize hydrogen containing [materials](#), such as many [composites](#), and has demonstrated success in fan blade inspections as an alternative to X-ray CT.

Unlike traditional non-destructive X-ray testing, neutron radiography offers a unique ability to see through [metals](#) and reveal organic materials, as well as numerous other materials within the component.

Benefits of Neutron Radiography for Turbine Engine Parts

Neutron radiography offers several benefits for inspecting turbine engine parts compared to other imaging techniques like X-ray radiography. Here are some key advantages:

- **Core Detection:** able to detect small quantities of residual core in internal passages.
- **Comprehensive inspection:** Able to check for brazing quality, delamination, joint defects and the presence of hydrogenous substances in sealed units.
- **Non-invasive:** As a non-destructive method, it preserves the integrity of turbine engine parts while providing critical information.



- **Complementary technology:** Often used in conjunction with X-ray radiography to provide a complete picture of the metallic and organic components of engine parts.

Applus+ Laboratories Accreditations for testing Turbine Engine parts with Neutron Radiography

We are a pioneering neutron radiography company distinguished by our approvals from major jet engine manufacturers and a global reputation for advanced [NDT services](#). Our state-of-the-art facilities, equipped with the best neutron imaging technologies, serve a broad spectrum of international clients in the [aerospace](#), and defense industries.

Our dedication ensures that we meet the highest NDT certification standards, reaffirming our leadership position in this field.

Why choose Applus+ Laboratories for test Turbine Engine Parts with Neutron Radiography

[Applus+ Laboratories](#) is at the forefront of neutron radiography and is renowned for its advanced NDT services worldwide. Our state-of-the-art facilities serve a diverse customer base in the aerospace, defence and explosives sectors, ensuring compliance with the highest NDT certification standards. Our dedication to excellence is evident in our comprehensive radiographer [training and expert neutron radiography consultancy](#).

Choose Applus+ Laboratories for neutron radiography testing, aligning yourself with a world leader in advanced NDT and the global leader in the neutron radiography inspection of turbine engine components, inspecting hundreds of thousands of jet engine components annually. Trust Applus+ Laboratories for unrivalled information on the integrity of turbine engine parts, ensuring safety and performance to the highest standards.