

# FAB S and LAB S

## Garlock Precision Materials Production



**G**arlock has strengthened its position in advanced RF materials manufacturing through its state-of-the-art cleanroom facility in upstate New York. Designed to support production of its WavePro dielectric materials, the facility reflects a broader strategy to scale precision manufacturing while maintaining the highest standards of quality, traceability and process control.

The cleanroom is purpose-built to provide the tightly controlled manufacturing conditions required for ultra-low loss dielectric materials used in RF, microwave and mmWave applications. Engineered to ISO 14644 standards, the cleanroom minimizes contamination and variability — two critical factors in RF material performance. Even minor inconsistencies in dielectric properties can significantly affect antenna efficiency and system reliability, making process control a central priority.

The facility supports Garlock's WavePro product line, a family of engineered dielectric materials for RF and microwave applications. These materials are designed to deliver low loss, thermal stability and mechanical consistency, enabling smaller, lighter and higher performance antenna designs across wireless, aerospace and defense systems.

The new cleanroom includes an integrated cold room for raw material storage. This controlled environment helps maintain the consistency of incoming materials and ensures they enter the manufacturing process in a well-defined, stable condition. All subsequent processing and final product handling occur under standard cleanroom conditions. This focused approach to environmental control improves process consistency and reduces variability, helping ensure that every batch meets its defined performance requirements without implying sensitivity to normal operating temperatures.

Garlock has also invested in advanced measurement and inspection systems that ensure consistent quality and performance. These capabilities help verify key characteristics during manufacturing, reinforcing precision and repeatability. Along with established material controls, these systems help produce safe, reliable products designed for use across a wide range of critical applications and markets, including those with stringent performance and reliability expectations.

Beyond its technical capabilities, the cleanroom marks a shift toward more agile and scalable production. As RF engineers push into higher frequencies and more complex system architectures, material demands are evolving rapidly. WavePro is positioned as a flexible solution, with customizable dielectric properties and form factors that support a wide range of applications, including patch antennas, DRAs, RF lenses and radomes.

The facility is expected to ramp up production throughout 2026, aligning with growing demand in the aerospace and defense markets. These sectors require materials that deliver consistent performance under extreme environmental and operational conditions — an area where Garlock has deep experience across its broader materials science portfolio.

Ultimately, the cleanroom facility underscores Garlock's commitment to advancing materials science and enabling next-generation RF technologies. By combining controlled manufacturing environments with advanced process monitoring and scalable production, the company is positioning WavePro as a key enabler for engineers developing high frequency systems.

<https://waveproantenna.com>