

StenTech BluPrint™

Ultra Vapor Coating



Exclusive Cutting-Edge Chemical Vapor Deposition Surface Treatment

Revolutionary precision engineered stencils
for high-volume printing consistency,
servicing the semiconductor and EMS industry.



StenTech BluPrint™ CVD (Chemical Vapor Deposited) Surface Treatment represents a ground breaking technique for applying thin material films onto a substrate. This innovative process involves introducing chemical precursors into a reactor chamber, where they undergo chemical reactions and solidify as a deposited material on the substrate's surface.

REVOLUTIONARY TECHNOLOGY

StenTech BluPrint™ CVD Stencils.

StenTech BluPrint™ eliminates the need for frequent replacements and ensures a longer lifespan for the stencil, ultimately reducing maintenance and replacement costs associated with traditional coatings while dramatically enhancing overall performance.

We are proud to present our latest innovation in stencil coating technology – the all new **StenTech BluPrint™ CVD (Chemical Vapor Deposited) Surface Treatment**. Engineered to elevate the Surface Mount Technology (SMT) processes, this advanced coating offers a comprehensive set of benefits that collectively contribute to improved stencil performance, longevity, and the overall quality of the SMT assembly process streamlining production.



WINNER:
2024 CIRCUITS ASSEMBLY NPI AWARD

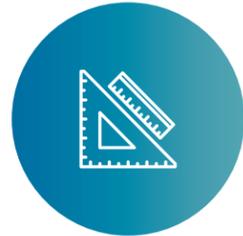


The continuous drive to reduce component sizes and circuit boards poses a challenge for solder paste printing with laser-cut stainless-steel stencils. Laser technology advancements align with coating finish improvements for these stencils. StenTech's BluPrint™ CVD is meticulously designed to be the top choice in North America for meeting the evolving requirements of the semiconductor and EMS industry.



FEATURES

StenTech BluPrint™ is the most sophisticated stencil surface treatment available and exclusive to StenTech.



Ultimate thickness consistency

The advantage of StenTech's Chemical Vapor Deposited Surface Treatment lies in its consistent thickness across all areas, eliminating the dependence on the dynamic physics involved in spraying a liquid. This revolutionary coating process also offers a range of extended advantages, including exceptional thermal stability, chemical inertness, anti-stiction properties, a refined smooth surface finish, customizable characteristics, and unwavering consistency in print quality.



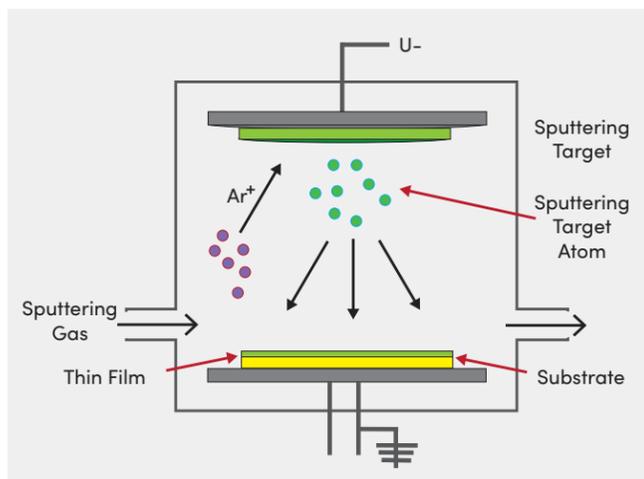
Virtually indestructible

StenTech BluPrint™ offers consistently repeatable processing without variation, providing a virtually indestructible coating that remains resilient without degradation and ensures uniform printing, with the only variation being the area ratio, while each aperture remains identical.



Enhanced performance

The StenTech BluPrint™ process begins with plasma polishing, creating a smoother, high-gloss surface with improved corrosion resistance. This process polishes both the stencil foil surface and aperture sidewalls, resulting in smoother sidewalls as a base for the subsequent coating. StenTech's BluPrint™ CVD Surface Treatment is then applied at a thickness approximately 1000 times thinner than current alternatives, ranging from 3-5 micrometers compared to 3 nanometers.



In the StenTech BluPrint™ CVD process, the wafer is exposed to one or more volatile precursors, which react and/or decompose on the substrate surface to produce the desired deposit.

This process involves rotating "Targets" or "Precursors," made from special materials, inside a chamber with stencils for coating. When heat and vacuum are applied, the materials undergo oxidation, vaporize, and then redeposit onto the stencil foil. These vapor-deposited materials form layers of color and coatings, resulting in a unique hydrophobic and oleophobic coating.

BENEFITS



1ST IN THE US NORTH AMERICA MARKET



LIFETIME GUARANTEE OF THE STENCIL*



SUPERIOR TRANSFER EFFICIENCIES



ULTIMATE REPEATABILITY REDUCED COSTS



CONSISTENCY OF CPKS CONTACT ANGLE 105-107 RANGE

01

UNIFORM COATING THICKNESS

StenTech BluPrint™ CVD ensures a uniform and conformal **1 atom thick coating**, providing consistent thickness across complex geometries of SMT stencils. This uniformity is crucial for achieving precise and reliable solder paste deposition during the printing process.

02

ENHANCED DURABILITY

StenTech BluPrint™ CVD coating can significantly improve the durability and wear resistance of SMT stencils. This is important in high-volume production environments where stencils are subjected to repeated use, reducing the need for frequent replacements and maintenance.

03

HIGH THERMAL STABILITY

StenTech BluPrint™ CVD coating often exhibit excellent thermal stability, making them suitable for applications involving elevated temperatures during the soldering process. This stability helps maintain stencil integrity and performance under demanding manufacturing conditions.

04

CHEMICAL INERTNESS

The chemical inertness of StenTech BluPrint™ CVD coating makes them resistant to reactions with solder paste and other process chemicals. This resistance contributes to the longevity of the stencil and ensures consistent performance over time.

05

ANTI-STICTION PROPERTIES

StenTech BluPrint™ CVD coating can provide anti-stiction properties, reducing the likelihood of solder paste sticking to the stencil. This is particularly important for preventing defects such as solder bridging, ensuring clean and accurate paste transfer onto PCBs.

06

SMOOTH SURFACE FINISH

StenTech BluPrint™ CVD coating typically results in a smooth surface finish on the stencil. A smooth surface minimizes friction during the printing process, facilitating better release of solder paste and improving the overall quality of printed solder joints.

07

CUSTOMIZABLE PROPERTIES

StenTech BluPrint™ CVD processes allow for the customization of coating properties such as thickness, hardness, and composition. This flexibility enables manufacturers to tailor the coating to specific requirements, optimizing stencil performance for diverse applications.

08

CONSISTENT PRINT QUALITY

StenTech BluPrint™ The combination of uniform coating thickness, durability, and other properties ensures consistent print quality over multiple production cycles. This is essential for achieving high-yield and reliable SMT assembly.



In the SMT industry, precise stencils and tooling are indispensable. These components demand meticulous design and prompt delivery, leaving no room for compromise on quality, speed, or reliability. Any issues or delays can lead to substantial costs in an environment where timing is paramount, and faults are expensive. The advantage of doing business with StenTech lies in our commitment to excellence and comprehensive support throughout every stage of the process. With our extensive industry experience, engineering prowess, unmatched range of quality solutions, and exceptional support, we consistently provide added value as the most trusted go-to partner for our customers.



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StenTech BluPrint™ is a trademark of StenTech Inc.
* Please note that the "lifetime guarantee" for the stencil is subject to specific terms and conditions. This guarantee covers defects in materials and workmanship for the duration of the stencil's useful life, as determined by the manufacturer and is void if not used in accordance with the manufacturer's instructions.