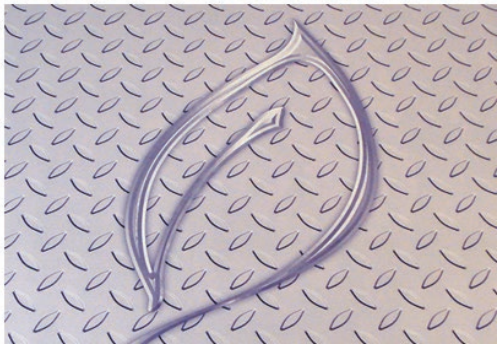
STRATUS

Aligning Texture and High-Definition Imagery for Ultimate Aesthetic Appeal

3D-HD Printed Laminates

STRATUS™ brings a "wow" factor look and feel to any decorative laminate surface—regardless of substrate type.



APPLICATIONS

STRATUS can be used to generate premium surfacing for any laminate application:

- Architectural Walls
- Counter Tops
- Office and Home Furniture
- Store Fixtures
- Ceiling and Wall Panels
- Signage and Digital Print Media
- Post Formed Composites
- Thermofoils

Decorative laminates provide alternatives to traditional building materials such as stone, wood, granite, and brick. Efforts to make such laminates mimic these traditional alternatives are often problematic. Typical printing inks are not sufficiently robust and stretchable to survive laminate processing, or otherwise do not retain definition quality. Even in rare cases where high-definition printing is successful, the texture generated does not emulate the original. Furthermore, technologies used to generate image and texture (e.g., embossing) are expensive, require substantial heat and pressure that can damage image quality, and fail to "align" the two with appropriate precision. Thus, traditional decorative-laminate manufacturers struggle to generate products that truly have the "look and feel" of the building-material counterparts they strive to emulate. Separately, the print processes used for generating today's decorative laminates do not allow for image customization and the creation of new, innovative designs.

Biovation's STRATUS technology combines high-definition digital printing, stretchable UV inks, and transparent wear-resistant coatings—all with intelligent, multi-layer, computer-automated surface mapping and print algorithms—to generate decorative laminates that "look and feel" like the materials they mimic. Moreover, stratus facilitates the creation of highly custom and innovative designs.

Biovation Acquisition COMPANY

Montgomery, MN | Broadway, NC
Wilmington, DE

BENEFITS

- **Realistic texture:** STRATUS generates real, accurate texture. A knot in a wood pattern will feel raised as expected.
- **High-definition image:** Using state-of-the-art digital printing, STRATUS translates the intended image to the surface with the highest clarity and definition.
- **Precise image-to-texture alignment:** STRATUS turns a surface into a user experience—wood grain, brick mortar joints, granite smoothness—it simultaneously looks and feels as expected.
- **Custom look:** With STRATUS, the look of a surface is limited only by your imagination. Teddy bears and stethoscopes for a pediatric hospital, Brazilian rosewood for a conference table, your team's logo throughout a sports stadium—whether based upon scanned originals or computer generated images, STRATUS is unrivaled in bringing surface aesthetics to the 21st century.
- **On-demand, any-quantity orders:** Want a slightly (or vividly) different look across your new or renovated property, or product lines that rely on surface appeal? STRATUS enables fast, reliable, and custom printing for virtually any order quantity.
- **Substrate independent:** Boards or films; LPL or HPL; petroleum-based or bio-based materials—STRATUS is substrate agnostic, bringing "wow" factor look and feel to any decorative laminate surface.

IP PROTECTION STATUS

STRATUS and related technologies are protected by patents, pending applications, and trade secrets.

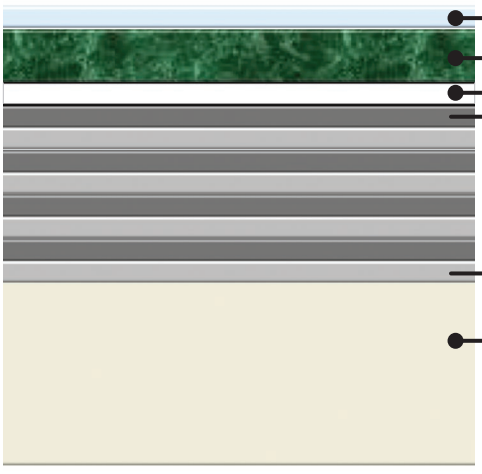
HOW IT WORKS

STRATUS combines expertise from diverse domains including state-of-the-art digital printing, UV-ink design, multi-layer thin film processing, coating design/application, and computer image analysis. At its core, the concept behind STRATUS is to separate, yet align, the printing of texture and aesthetics layers to ensure the image concept becomes the image "reality" (i.e., to ensure the expectations surrounding both texture and aesthetics properly match). The process entails the following:

1. **Select Image:** Create/select image from either a scanned original or a computer generated graphic.
2. **Map Texture from Image:** Create a topographical texture map through computer image analysis.
3. **Prepare Core Substrate:** Process the substrate to ensure downstream adhesion is optimized and blemishes are minimized.
4. **Build Texture:** Print multiple layers as needed to provide texture customized for selected image.
5. **Apply Mask Layer:** Print a mask to provide a canvas for the print layer.
6. **Print Image:** Print multiple layers as needed to provide aesthetic appeal for selected image.
7. **Apply Clear Coat:** Apply a mineral-loaded top layer that provides gloss, scratch resistance, and other tailored properties.
8. **Final Curing:** Provide final cure to lock in image and texture quality and alignment.

STRATUS IN ACTION

STRATUS has been demonstrated at production scale (4' x 8' sheets) in Biovation's manufacturing facility on a variety of substrates including Biovation's BioSurf2D products and high-pressure laminates (HPL) purchased or acquired from development partners. STRATUS can be applied to any flat surface that can accept a digital print layer.



To purchase STRATUS products, visit www.biosurfsolutions.com

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