

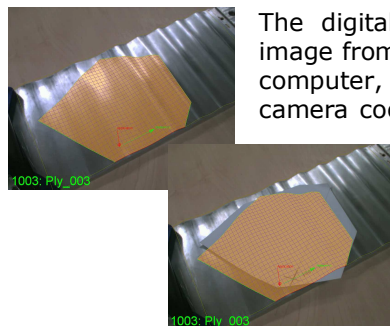
PlyMatch™ - Ply Placement Technology

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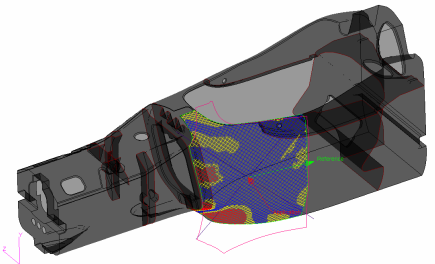
During **manufacture of composite structural components** by manual lay-up, accuracy in ply placement as well as quality assurance regarding the correct ply sequence and orientation are very important factors. The purpose of the novel **Ply Placement Visual Aid System** from Anaglyph is to display together on a computer screen a live video image of the "real world" that the operator is interacting with, and a computer-generated image of the structure and composite ply being assembled.

The data for the computer generated drawings of the plies that are displayed correctly in place, may originate from virtually any CAD application, or from Anaglyph's **Laminate Tools** software application, for additional features. In this way, **ply information comes directly from design** and may not require any translation or manipulation whatsoever, for use with the present system.

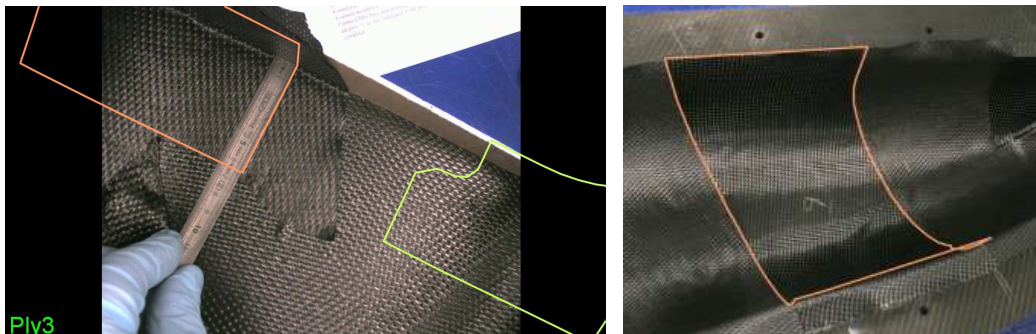


The digital camera coordinates and the live video image from the camera are both fed continuously to a computer, via suitable interfaces. By using the digital camera coordinates, the supplied Placement software

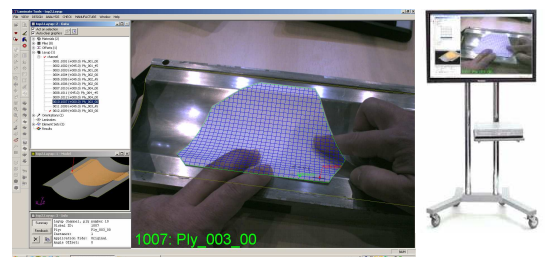
application (or the Laminate Tools software application where available) draws the computer-generated image of the fabric ply to be stacked next in sequence, in a way that it matches the image of the "real world" as seen through the camera. **The computer-generated image of the ply is drawn superimposed onto the live video image from the camera**, giving a virtual-reality compound picture (also known as "augmented reality").



The operator observes the computer screen and aligns the actual ply with its CAD image:



Note that **the camera can be moved at all times**, ensuring the best viewpoint for the operator, matching his/her angle of view, and observing the component from all directions. As the camera is moved, the coordinate-measurement system continuously updates the camera's position to the computer software so that the computer-drawn image follows the changes in the video image. If necessary, a complete **video recording** of the layup operation may be obtained on hard disk, showing any possible deviations from nominal ply position, or even fibre orientation.



(for illustration only, actual specification may vary)

The PlyMatch™ System comes in flexible configurations to suit your requirements. As a minimum, it includes:

- PC with suitable display,
- Placement software,
- Laminate Tools software extensions for video and probe interfaces and image blending,
- Digital camera with boom stand,
- Coordinate Measuring Machine with wireless and tool reference probes,
- On-site training.