

Appendix

Peel Tester

Keeping the peel angle constant during testing on human subjects was challenging. A key component of the peel tester used in the study was a specially designed pulley system that was affixed to a sliding block mounted to an overhead gantry. A string was run through the sheave of this pulley, and one end of the string was attached to a digital force gauge (DS2-4; Imada, Northbrook, Illinois), which remained stationary. The other end of the string was attached to a spring clip that was firmly attached to the free edge of the drape sample strip (Fig. 2). A computer-controlled single-axis robotic arm (Pico Series T5; Yamaha Robotics, Fort Wayne, Indiana) was used to move the sliding pulley system along the overhead traverse in a linear fashion. Increasing tension was placed on the string as the pulley module moved forward. The geometry was such that the force generated as the adhesive drape sample resisted being peeled away from the skin always pulled on the stationary force gauge in the same direction, regardless of the location of the pulley. Both the robotic arm and the digital force gauge were interfaced to a computer, allowing real-time collection of the peel test data.