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A COMPARATIVE STUDY OF ASSEMBLING METHODS OF NONWOVEN BAGS TRADITIONAL SEWING VS WELDING SEAMING

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ABSTRACT

Understanding the techniques for joining fabrics together in a way that considers durability, strength, leak-tightness, comfort in wear and the aesthetics of the joints is critical to the production of successful, structurally secure fabric products. For nonwoven shopping bags, two sides of a bag are sewn together, and handles are attached to the body of the bag. Recently the same operation has been replaced by a thermal technology to achieve the operation performed by traditional sewing. The aim of this study was to compare the properties of nonwoven fabrics, when joint with ultrasonically welded seam and with the traditional sewing with different sewing factors, such like; stitch types, stitch length and seam types. The comparison was done throughout examining the bending stiffness, seam strength, seam elongation, seam efficiency and shear rigidity. In general, the ultrasonically welded seam is stiffer than traditional seams. The traditional seam has a mean strength 40 % higher than ultrasonic seams. The lock stitch 301 had the highest value of seam strength. The seam efficiency by welded seam is about 56%, while by the traditional seam is 93.75%. The overlock stitch 505 had the highest values of shear rigidity.

KEYWORDS: Bending Stiffness, Nonwoven Bags, Seam Elongation, Seam Strength, Shear rigidity, Traditional Sewing, Ultrasonic Welding Seam