

Sealed Seams for Fluid, Vapor and Air Barrier Articles

Description:

Composite films are required to be light-weight and durable in order to be effectively used in a variety of fields. The current conjoining method uses polytetrafluoroethylene heated above the melting point and then pressed. However, this method is very costly and energy intensive. An inexpensive method is to use polyvinylidene fluoride which can form a film and a thin layer of glass fiber is impregnated with an inexpensive resin as an intermediate layer. To conjoin the above structure a mechanical method (sewing) is used. However, this creates stresses at the conjoining point and affects durability of the films.

Clemson researchers have developed a conjoining method for a composite film characterized in that during the conjoining of the composite film comprised of polyvinylidene fluoride as the outer layer and a core material which are laminated with each other, the edge of one film is wrapped with polyvinylidene fluoride film and conjoined at a temperature of 350 degrees C or less.

Applications:

- Waterproof Cloths
- Pneumatic Structures
- Stadium Covers

Benefits:

- Better Mechanical Properties
- Lower Processing Temperatures
- Lower Manufacturing Costs

Inventors: Christine Cole, Robert Bennett,
Brian Frederick

Protection Status: Patent issued; # [8,361,582](#)

Licensing Status: Available for licensing

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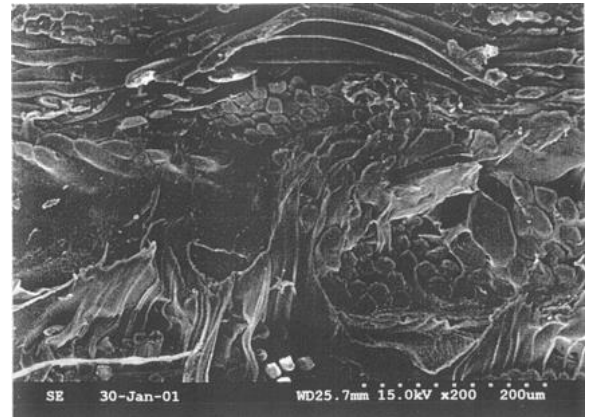


Figure 1: Seam formed by a polyurethane bilayer thermoplastic tape bonded at 380 °F.