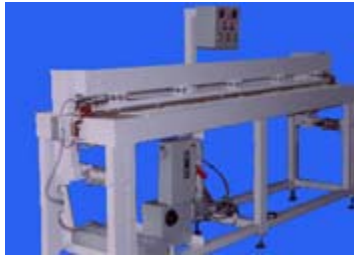


Heat Sealing and Heat Sealing Options

By Glenn Lippman, President, Novaseal Corporation
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Heat sealing is a term used to define a method of attaching one or more layers of thermo-plastic synthetic material to itself. Other options exist for non-thermo-plastic materials such as sewing, adhesives, and mechanical means. However, for thermo-plastic materials, heat sealing is the most cost efficient producing the best quality seam in the least amount of time.

For most applications, heat sealing processes include two critical components – application of heat under pressure; and application of cool or no heat under pressure. Depending on the option used, heat sealing can be used with similar and/or dissimilar materials, ie. Polyethylene to polyethylene, or polypropylene to polyester.



Heat sealing options include:

R.F. or High Frequency Heat Sealing

Uses high frequency energy to seal dielectric materials , i.e. vinyl. Typically high frequency sealing uses a bar of varying lengths and widths (1/4" to 2"). The dimension of the sealing bar creates the sealing pattern. This process creates very nice looking seals, although high frequency sealing is relatively slow, expensive and only works with a limited range of materials, and does not work well with dissimilar materials.

Ultrasonic Heat Sealing

Uses noise energy to seal thermo-plastic materials. Noise frequencies vary from approximately 15KHz (loud noise – larger sealing area) to 40 KHz (relatively quiet –small sealing area). Typical seam widths range from 1/4" to 1". Ultrasonic sealing can either be accomplished with a bar sealer or a rotary sealer. Not all materials can be ultrasonically sealed, although the material range is much greater than high frequency sealing.

Wedge Welding

Uses a heated platen located between the layers to be welded. The heated platen or wedge moves between the layers with very little friction and therefore wedge welding is, perhaps, the fastest method for welding long runs. Works very well with almost all thermo-plastic materials from plastics to synthetic textiles. Works better with thicker materials (over 20 mil per layer). Wedge welding used predominantly to weld vinyl or pvc coated textiles, high density materials, synthetic textiles including polypropylene, polyester and nylon.

Impulse Sealing

Uses a heated nichrome wire under pressure to seal a wide range of materials. Takes the form of a bar sealer, although can be modified to work as an impulse activated wedgewelder. Works best with thin materials ranging from under 5 to 40 mil to produce a seam width ranging from 1/8" to 1/2" on materials such as supported or unsupported vinyl, polyethylene, and many flexible materials.

Used commonly in outdoor displays.