

FastelFilm™ HPB

P/N: HPB-900

Low Temperature Thermal Bonding Film

FastelFilm HPB-900 is a high strength low temperature thermal bonding adhesive film designed for adhering both low surface energy materials (plastics and films) as well as aluminum, copper, stainless steel, FR4, glass, rubber and ceramic materials. Designed with higher peel strength than our traditional FastelFilm adhesive formulations, HPB-900 is ideal candidate for mobile phone assembly, tablet and notebook PC assembly, electronic device mounting, automotive component assembly as well as medical device assembly application.

With a low melt point temperature, FastelFilm HPB-900 can be efficiently heat cycled in production using industry standard commercially available or custom heating equipment. The low melt point of 93°C allows FastelFilm HPB-900 to offer quick heat cycling times compared to higher temperature competitive thermal bonding films. As a free standing die cut adhesive film pad, FastelFilm HPB-900 allows for quick and clean “drop-in-place” installation/setup and instantly ready to be heat cured above its melt point temperature. Once HPB-900 is allowed to quickly cool below 93°C, the adhesive creates a secure long term and reliable bond.



Low temperature melt point
Shock / vibration resistant
Uniform bond line adhesion/sealing

Fast curing
Controlled flow
Quick installation and fixturing

Indefinite shelf life
Solvent resistant
Die Cut, sheets or rolls

FastelFilm HPB-900 Temperature Requirments

HPB-900.....93°C / 200°F
 Bond line temperature required to allow to soften and flow
 For higher temperature adhesive, see FastelFilm HPB-1200 (120°C)

Standard FastelFilm HPB-900 Thicknesses

0.05mm (0.002”) 0.10mm (0.004”) 0.15mm (0.006”)
 0.22mm (0.009”) 0.30mm (0.012”) Customs Available

HPB-900 Pre-Tack Options (before heating)

* PT = built in adhesive surface tack

The HPB-900 Pre-Tack option provides tack on both sides of the FastelFilm allowing for secure substrate/adhesive fixturing before heating. The Pre-Tack option will not affect the overall bonding performance of HPB-900 when heated and cooled.

Liner Type / Thickness

* 0.08mm (0.003”) White Paper (standard)
 * 0.05mm (0.002”) Clear Polyester (optional)

Adhesive Delivery Options

* Die cut pads (individuals)
 * Die cut pads (continuous rolls)
 * Rolls or sheets

Product Film / Coating Options

* Free standing adhesive film (standard)
 * Aluminum, copper or stainless
 * PET, PE, polyimide films
 * Customer defined substrates

HPB-900 Color

* Translucent / yellow tint (standard)

Other Information

* No Outgassing
 * RoHS Compliant Material
 * 100% Waterproof

FastelFilm HPB-900 is a low temperature thermal bonding film that is designed to provide uniform adhesion strength between similar or dissimilar substrate surfaces. The ability to manufacture FastelFilm HPB-900 in few adhesive film thicknesses, rolls, sheets or pre-form die cuts allows us to meet a wide range of bonding requirements within multiple industries. FastelFilm HPB-900’s inherent flexibility from manufacturing to installation makes it an ideal solution for applications ranging from low volume (even prototypes) and/or high volume production environments. FastelFilm HPB-900 is manufactured to superior quality guidelines set forth by our ISO 9001:2008 Quality Standards and offers a quick turnkey solution from design to production.

Heat Curing Application Methods

FastelFilm HPB-900 can be heat cured using commercially available heating devices. When cycled past its low temperature melt point, HPB-900 will begin its controlled flow filling in any microscopic surface conditions that may exist on your mounting surface as well as adjust for any flatness conditions.

Recommended heating devices include a curing oven, heated press, hydraulic press, heated roller(s), heated flat plate, heat tunnel, heat gun or custom fixture/heating device.

HPB Type	Bondline Heating Temp (Full Bond)	Heating Time (Full Bond)	Pressure (Full Bond)	Bondline Heating Temp (Tack)	Heating Time (Tack)
900	95°C to 115°C	3 ~ 15 seconds (see note 1)	5 ~ 30 psi	55°C ~ 65°C * 3 ~10 psi	1 ~ 2 seconds (see note 1)

* tack temperature should be kept below 55°C to prevent full melt of adhesive film

Note 1: required heating time (full bond or tack) will vary depending on your heating device, setup and substrate materials being adhered. Testing within the scope of your application is recommended to determine your optimal setup, heating time, pressure and temperature to yield desired results. Temperatures, heating time and pressures listed are general recommendations only.

To obtain maximum adhesion, bonding surfaces should be clean, dry and free from grease, oils or debris.

FastelFilm HPB-900, once heated and begins its on-slot temperature drop, should be allowed to fully cool before applying stress.

The amount of pressure being applied to your substrate during setup should be determined beforehand in order to minimize the effects of the adhesive flowing into unwanted areas outside the desired mounting or sealing interface during heating at higher than normal pressures.

Want to cure FastelFilm HPB-900 alongside other heat curing materials?

Not a problem with HPB-900. FastelFilm HPB-900 Adhesive can be cycled higher than its recommended application temperatures for long periods of time if being cured alongside other heat required materials/adhesives that require longer cycling times in a curing oven.

Fastelfilm HPB-900 Physical Properties (free standing film)

Characteristic	HPB-900 Adhesive
Base Formulation	Heat Activated Thermal Bonding Film
Adhesive Thickness Tolerances	+/- 10% of target thickness
Die Cut Pad Dimensional Tolerances	0.25mm (0.010") Typical
Liner Type / Thickness	0.08mm (0.003") White Release Paper (standard)
Liner Type / Thickness	0.05mm (0.002") Clear Polyester (optional)
Solids	100% Solids
Color	Translucent / Yellow Tint (depending on film thickness)
Standard Sheet Sizes	30.5cm x 61cm (12.0" x 24.0")
Standard Roll Width	30.5cm (12.0")
Standard Roll Lengths	30.5m (100ft), 76.2m (250ft)
Die Cut Methods	Steel Rule Die, Flexible Die, Rotary Die Cutting

Storage & Shelf Life	Result
Storage Condition and Temperature	Cool Dry Location at or below 95°F / 35°C
Shelf Life	Indefinite if stored per storage conditions above

Substrate Options

Need HPB-900 coated at a specific thickness onto one or both sides of a substrate?

FastelFilm HPB-900 can be coated at varying thicknesses on a wide range of substrate types designed to meet a specific application requirement.

For custom coated substrates, please contact toll free 1-888-989-3832 (US) +1-949-369-7676 (international) or e-mail info@fasteladhesives.com

	Aluminum 1100 1235	Copper 110 101	Stainless 304 321	Brass	Inconel
Foils					
Plastics & Rubber	PET Film	Heat Stabilized PET	Polyimide HN And MT Films	Foams (Various Durometers)	Rubber (Various Types)
Other	Fabrics	Paper	Synthetics	Laminates	Customer Defined Substrate

HBP-900 Customer / Application Benefits

- * Low temperature heat cycling required which allows for quick and efficient installation
- * Uniform adhesion strength resulting from HPB-900's consistent adhesive thickness
- * High performance bond (HPB) between similar or dissimilar substrates as well as low surface energy materials
- * Pre-Tack (PT) option allows for quick adhesive pad placement to application surface before heating.
- * Assembly line flexibility, ease-of-use—from pick and place to hand placement assembly
- * Minimal waste — die-cut pads are matched to customer specific mounting outlines

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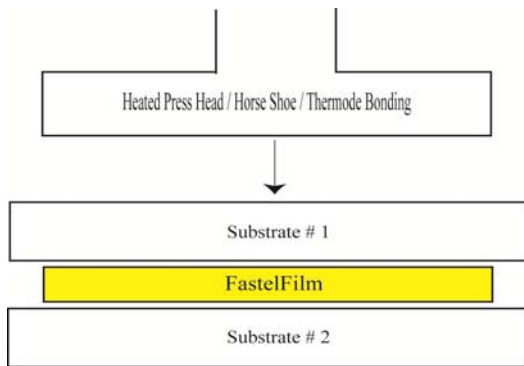
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Fastelfilm HPB-900 Typical Heating Methods

The following diagrams illustrate basic setups using various commercially available heating methods. Fastelfilm HPB-900 can be applied, heated and cured using common thermal induction methods including a curing oven, heated press, hydraulic press, heat tunnel, heated lamination rollers, heat gun or custom built fixture/heating device. Determining your optimal setup and heating method should be tested beforehand and is dependent on your substrates, setup pressure, heating device, heating time as well as Fastelfilm formulation and thickness being used. **With all setups, carrier liner should be removed first before applying.**

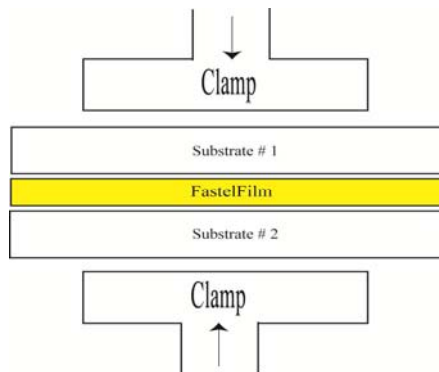
Apply heat using a heated press / horse shoe / thermode bonding method. Heat transfer through substrate # 1

Good for setups, tacking, small surface areas or low to mid volume applications



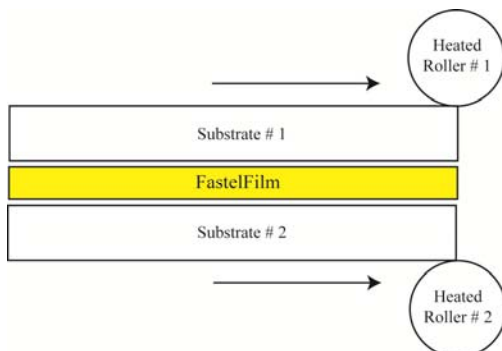
Clamp entire assembly together. Apply heat using multiple methods of heating including curing oven, heat tunnel or heat gun

Good for small or large surface areas as well as low, mid and high volume applications



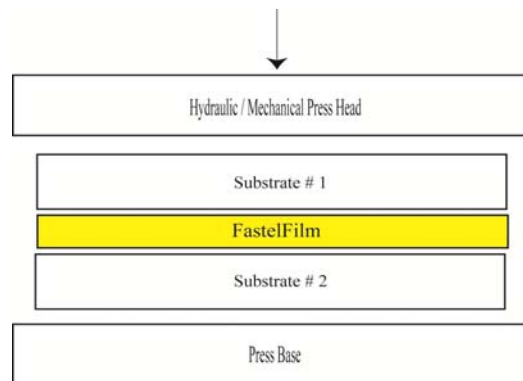
Process through top and bottom (or single) heated rollers. Heat will transfer through substrates.

Good for large or continuous surface areas for a mid to high volume application environment



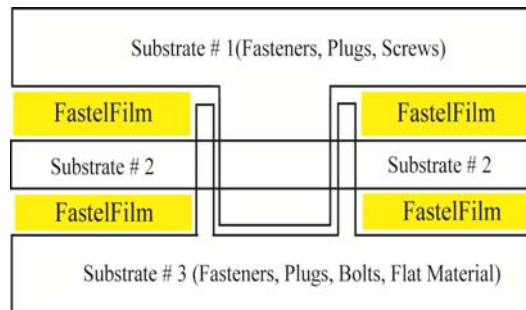
Apply heat using a hydraulic/mechanical press. Heat transfer through substrate # 1

Good for large surface areas or mid to high volume applications



General setup for bonding and sealing heads of mechanical fasteners / plugs / screws. Apply heat using a curing oven, heat tunnel, heat gun, hydraulic or mechanical press.

Good for small area high volume applications when wanting to bond and seal formed fasteners



Basic Examples

Washer Configuration



Frame Configuration



Fastelfilm HPB-900 Testing & Sampling

Adhesive material evaluation is always critical when designing in a new material or developing a new product. Sheet samples of Fastelfilm HPB-900 are available for preliminary testing to determine the optimal thickness, setup and heating method within the scope of your application requirements.

Want to test samples per your required die cut part? Our razor plotter sampling machine allows us to provide customers HPB-900 already cut to their required outline for testing. Plotter formed samples provide our customers the ability to test not only the adhesive, but their required outline as well without incurring the expense of production tooling.

Contact Fastel Adhesive Products at 1-888-989-3832 (US Only) +1-949-369-7676 (International) or e-mail info@fasteladhesives.com to request sample sheets or plotter formed samples for testing.