

Fastelek is a customizable heat activated electrically conductive thermoplastic adhesive available in a few performance fillers, thicknesses and phase-change (melt point) temperatures. Fastelek is designed to adhere strongly to a wide range of materials packaged with a low resistant electrical path performance which makes it an ideal solution for assembly and EMI/RFI Shielding application for electronic devices within the consumer electronics, automotive, medical and alternative energy markets.

As a dry-to-the-touch or tacky at room temp free standing adhesive film, Fastelek can be die cut to match a wide range of mounting and sealing application areas. Applications can vary from bonding and/or sealing fasteners or contacts, components, adhering materials for lamination, case sealing or difficult areas of general device assembly where liquid adhesives can run-out. As a die cut adhesive pad, Fastelek allows for quick and clean “drop-in-place” installation/setup and instantly ready to be heating above its phase-change temperature using a wide range of thermal induction methods. Once allowed to cool below phase-change, the adhesive is set.



Multiple filler selections
Multiple phase-change temperatures
Various film thicknesses
Die-cut, sheets, rolls

Excellent adhesion to substrates
Controlled flow
Re-workable after first bond
Quick installation and fixturing

Dry Film or Tacky Film
Solvent free / acid free
Short lead times
Full Customizable

FASTELEK™ Conductivity Performance Choices

Fastelek Ni (nickel filled): 2.00 ohm-cm

Fastelek AG (silver): 5.00 x 10⁻¹ ohm-cm

Fastelek AG-MX80 (silver): 7.25 x 10⁻² ohm-cm

* see page 2 for conductivity performance details. Contact us for graphite filled solutions. Standard products with Ni, AG, or AG-MX80 are with maximum filler load possible @ 1.5 mil thick. Custom reduced filler loading available.

Standard Fastelek Melt Point Temperatures

Fastelek 16071.....160°F / 71°C
Fastelek 20093.....200°F / 93°C
Fastelek 230110.....230°F / 110°C

The above listed melt point temperatures are available with either Fastelek Ni, AG, MX80 filler versions.

Standard Fastelek Adhesive Film Thickness

- * 1.5 MIL (0.0015") (0.038mm)
- * 3 MIL (0.003") (0.08mm)
- * 5 MIL (0.005") (0.13mm)
- * 10 MIL (0.010") (0.25mm)
- * 15 MIL (0.015") (0.38mm)
- * 30 MIL (0.030") (0.76mm)

Custom film thicknesses available

Adhesive Delivery Options

- * Die cut pad individuals
- * Die cut pad on continuous rolls
- * Rolls or sheets
- * *DISCRETE Adhesive Placement on Substrate*

Product Film / Coating Options

- * Free standing adhesive film
- * Aluminum, copper or stainless foils
- * Customer supplied substrates
- * 100% surface coating or masked coating

Other Information

- * RoHS Compliant
- * REACH Compliant
- * Halogen Free Compliant

Fastelek is electrically conductive EVA based solvent free (filled) adhesive film that is designed to provide efficient electrical conductivity, uniform adhesion and sealing across a desired material interface. The ability to manufacture Fastelek in a variety of phase-change temperatures, film thicknesses, rolls, sheet and pre-form die-cuts allows us to meet a wide range of requirements within multiple industries. Fastelek’s inherent flexibility from manufacturing to installation makes it an ideal solution for applications ranging from low volume (even prototypes) and/or high volume environments.

Heating Methods

All Fastelek phase-change formulations can be heated using commercially available heating devices. **When cycled past its phase-change temperature, Fastelek 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 leading to even better conductivity after heating and cooling.**

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.

Fastelek Temp	Optimal Heating Temp	Heat Cycle Time (min)	Pressure
16071 (71C)	180°F to 220°F	5 ~ 30+ sec	20 ~ 50+ PSI
20093 (93C)	210°F to 250°F	5 ~ 30+ sec	20 ~ 50+ PSI
230110 (110C)	240°F to 280°F	5 to 30 + sec	20 ~ 50+ PSI

The parameters presented in the above table are general recommendations only and to be used as a starting point for experimentation within the scope of your application. Testing within the scope of your application, materials being bonded or sealed and heating device should be performed at multiple cycling temperatures in order to determine your optimal setup and heat cycling procedure.

All Fastelek Adhesive Products, once bonded, should be allowed to cool before applying any stress.

Note: make sure all applications surfaces are clean and free of debris before applying adhesive

Want to heat Fastelek alongside other heat curing / set materials?

Not a problem with Fastelek. Fastelek 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.

Fastelek Customer / Application Benefits

- * Uniform adhesion strength resulting from Fastelek's consistent adhesive thickness
- * Uniform and consistent bond strength
- * Assembly line flexibility, ease-of-use—from pick and place to hand placement assembly
- * Inherent low cost due to minimal capital expenditure requirement
- * Minimal waste — die-cut pads are matched to customer specific mounting outlines
- * Reduced scrap for further installation savings - Fastelek is re-workable after it has cured
- * No clean up or OSHA concerns — No “Run Out” with controlled thickness film or die-cut
- * More assembly line flexibility, scrap reduction—repositionable twice, before and after assembly

What problems can Fastelfilm Solve?

- * Uneven adhesive application along mounting interface
- * Long periods for setup / installation
- * Adhesive in unwanted application areas
- * Long cure times
- * Alternative to high cost conductive adhesives
- * Inability to re-work after curing
- * Short term storage conditions

Substrate Options

Need Fastelek coated at a specific thickness onto one side of a substrate?

All Fastelek formulations have the ability to be coated on a wide range of substrate types designed to meet a specific application requirement.

Masking Options: Fastelek adhesive masking options is a process in which the substrate is masked before applying the adhesive coating. The masking can then be removed to allow for exposed areas of the substrate. Popular for copper substrates where exposure of substrate in predetermined areas is desired for electrical contact or soldering.

Foils	Aluminum 1100 1235	Copper 110 101	Stainless 304 321	Graphite Pyrolytic	
Plastics	Kapton MT Films	Kapton MT+ Films	PET Films		
Other	Synthetics	Laminates	Customer Defined Substrate		

Custom coated substrates available

Fastelek Typical Properties (free standing film)

Characteristic	Fastelek Adhesive
Base Formulation	Thermoplastic (conductive filler)
Die Cut Pad Dimensional Tolerances	0.010" (0.25mm) Typical
Liner Type / Thickness	PET Release Liner (0.003", 0.076mm)
Solids	100% Solids
Liner Type / Thickness	PET Release Liner (0.003", 0.076mm)
Color	Dark Gray (version Ni), Beige (versions AG)
Die Cut Methods	Steele Rule Die, Flexible Die, Rotary Die Cutting

Electrical Conductivity	Volume Resistivity
Fastelek Ni (Nickel Filled, 0.0015" Thick)	~ 2.00 ohm-cm (max Ni loading)
Fastelek AG (Silver Filled, 0.0015" Thick)	~ 5.00 x 10 ⁻¹ ohm-cm (max AG loading)
Fastelek AG-MX80 (Silver Filled, 0.0015" Thick)	~ 7.25 x 10 ⁻² ohm-cm (max AG-MX80 loading)

Note: volume resistivity tested per ASTM D2739-97

Storage & Shelf Life	Result
Storage Condition and Temperature	Cool Dry Location at or below 85°F / 26°C
Shelf Life	1 year from date of manufacture

Application Re-Work / De-Bonding

A unique characteristic of Fastelek Adhesive is in its ability to be easily re-worked. Simply heat the adhesive past its phase-change temperature and pull apart your substrates. Depending on the amount of adhesive left on your application surface, introduction of new Fastelek material may be required when re-assembling. Fastelek Adhesive can be heated past its phase-change temperature numerous times allowing for multiple re-works if necessary. Adhesive residue in unwanted areas can be cleaned up using mineral spirits solvent and a cloth towel. Other clean up methods includes heating the adhesive close to its phase-change temperature and gently wiping away softened unwanted adhesive.

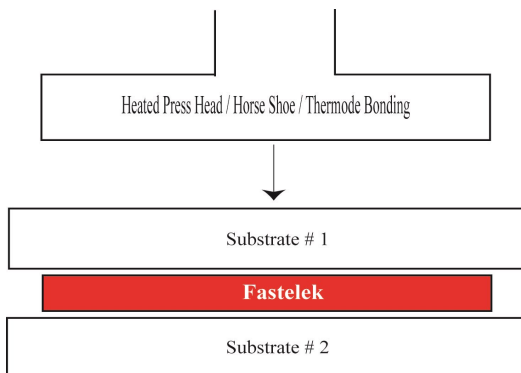
Note: For best results, make sure all application surfaces are clean and free of debris.

Fastelek Typical Application Methods

The following diagrams illustrate basic setups using various commercially available heating methods. Fastelek Adhesive 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 Fastelek formulation and thickness being used. **With all setups, carrier liner should be removed first before applying.**

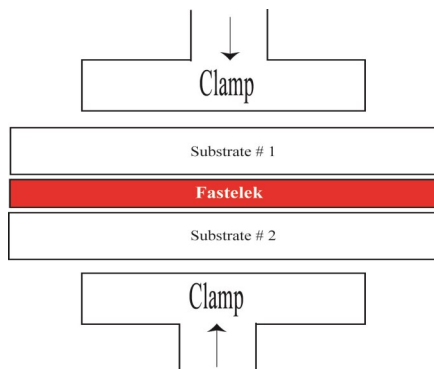
Apply heat using a heated press / horse shoe / thermode bonding method. Heat transfer through substrate # 1

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



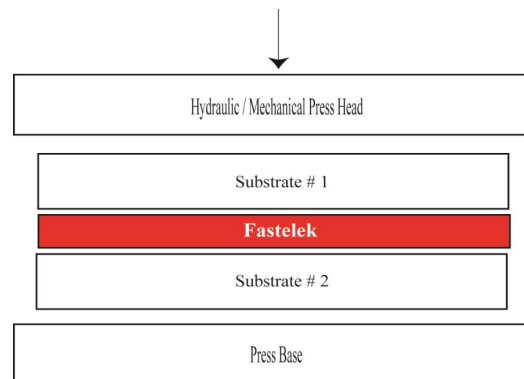
Clamp entire assembly together. Apply heat using multiple methods of heating including curing oven, heat tunnel or heat gun

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



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

Good for large surface areas or mid to 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 environments

