Customizable and Cost Effective

Induction and Heat Seal Foil Products

FastelFoil™

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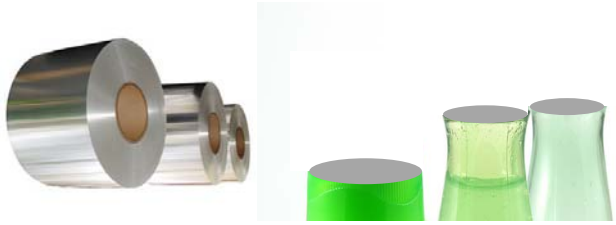

Rolls Slit Rolls Sheets Die Cut Seals

Creating and fast and impermeable seal to your container is what Fastelfoil is all about. Our Fastelfoil Products are readily available in multiple substrate constructions designed to best suit your foil sealing requirements. Fastelfoil can be applied using commercially available induction sealing and heat press devices. Fastelfoil can be delivered in continuous log rolls, slit log rolls, sheets or die cut seals per your specifications.

Product Features

Uniform bond line adhesion/sealing
Multiple foil constructions
Roll, Slit Roll, Die Cut, Sheet
Fastel Print Backing Options

Excellent adhesion to substrates
Chemical Resistant
Quick installation
Heat Press or Induction Sealing

Low cost foil sealing solution
Indefinite shelf life
Resistant to Handling
Short lead times

Standard Fastelfoil Material Constructions

Fastelfoil HS160 Series (heat or induction seal)
0.0005" to 0.003" aluminum substrate
0.001" to 0.005" 160°F / 71°C adhesive (proprietary)

Fastelfoil HS200 Series (heat seal or induction seal)
0.0005" to 0.003" aluminum substrate
0.001" to 0.005" 200°F / 93°C adhesive (proprietary)

Fastelfoil HS230 Series (heat or induction seal)
0.0005" to 0.003" aluminum substrate
0.001" to 0.005" 230°F / 110°C adhesive (proprietary)

Fastelfoil HS250 Series (heat of induction seal)
0.0005" to 0.003" aluminum substrate
0.001" to 0.005" 250°F / 120°C adhesive (proprietary)

Fastelfoil PE250 Series (heat or induction seal)
0.0005" to 0.003" aluminum substrate
0.001" to 0.005" polyethylene seal (250°F / 120°C)

Fastelfoil PP320 Series (heat or induction seal)
0.0005" to 0.003" aluminum substrate
0.001" to 0.003" polypropylene seal (320°F / 160°C)

Fastelfoil PET Series (induction sealing)
0.0005" to 0.003" aluminum substrate
0.001" to 0.005" PET seal layer

Note: within all FastelFoil types listed above, custom constructions available.

Foil Print Backing Options

* C1S or Cardstock Backing Options (Blank or Printed)
* Clear PET Backing Options (Clear or Printed)

Fastelfoil Delivery Options

* Continuous Rolls, Slit Rolls, Sheets
* Die Cut (seals or custom pre-forms)

Other Information

* RoHs Compliant Material

Fastelfoil…...not just for container sealing
Fastelfoil's usefulness goes well beyond container sealing for the packaging industry. All types of Fastelfoil aluminum sealing products have proven to be a viable foil layer seal solution for lamination within electronics, automotive, medical device, industrial as well as textile markets.

Fastelfoil Induction & Heat Seal Products are designed to make an impermeable seal and bond to a variety of plastic, glass and metal container types. The ability to manufacture Fasetlfoil in a variety of foil substrate, heat seal adhesive and plastic heat seal layer thicknesses allows us to meet a wide range of sealing applications.

Continuous Rolls

Log or Slit Rolls
0.25" up to 12" Wide
100ft or 1,000ft Rolls

Die Cuts

Die Cut to Specification
Die Cut Individuals
Die Cut on Continuous Rolls
Standard and Customs Available

Popular Induction Containers
LDPE
HDPE
PP
PET
CPET
APET
PVC

Popular Heat Seal Surfaces
Glass
Aluminum / Copper / Stainless
Untreated or Treated Glass
Polyimide
PET surfaces
Plastic Surfaces
Wood Surfaces
Coated Surfaces
Fabrics

Sealing Methods

All Fastelfoil Induction & Heat Seal Foils can be sealed using commercially available induction and heating devices. When Fastelfoil is cycled past its activation temperature through means of direct heat sealing of induction sealing, the material 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 an induction/die cut sealer, induction sealer, heated press, hot stamp press, wire seal or custom fixture/sealing device.

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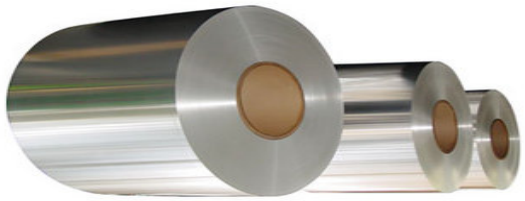

Fastelfoil Customer / Application Benefits

* High Performance adhesion and seal strength due to high performance adhesive system
* Quick sealing times / Bonds fast to a variety of plastic/glass/aluminum container types
* Multiple formats: continuous log rolls, die cut seals, pre-formed foil bags/sheets
* No clean up concerns around sealing area due to controlled adhesive flow
* Quantity is by linear ft (rolls) or each (die cuts). No shortages as a result of weight tolerances
* P250 Series provides a permanent bond through induction sealing PE layer to plastic container.
* HS160 Series provides a strong seal for users wanting to use glass container jars.
* HS200 Series provides slightly higher temperature adhesive for higher than normal storage conditions.
* Quick turn around from initial requirement to delivery
* Low cost foil seal solutions customizable with respect to material construction and/or printing

What problems can Fastelfoil Solve?

* Inability to get the foil construction you need
* Long lead times
* High order minimums
* Adhesive is unwanted areas around the seal area
* Eliminates having to slit down giant log rolls
* Eliminates additional converting steps
* Shortages as a result of ordering by weight with weight delivery tolerances

Standard Fastelfoil Materials & Pre-Fix Codes

Fastelfoil HS160 Material Construction Options

Fastelfoil HS160 Series	0.001" heat seal adhesive	0.003" heat seal adhesive	0.005" heat seal adhesive
.0005" aluminum	FE1-AL05	FE3-AL05	FE5-AL05
.001" aluminum	FE1-AL1	FE3-AL1	FE5-AL1
.002" aluminum	FE1-AL2	FE3-AL2	FE5-AL2
.003" aluminum	FE1-AL3	FE3-AL3	FE5-AL3

Note: custom aluminum substrates and adhesive coating thicknesses available. Heat seal adhesive activation temperature for HS160 Series is 160°F/71°C.

Fastelfoil HS160 Overall Material Construction

OPTIONAL FASTEL PRINT BACKING LAYER (C1S, CARDSTOCK, PET)
Aluminum Foil Carrier
Thermoplastic Adhesive Seal Layer

HS160 Series Overall thickness tolerance: +/- 10% of overall target thickness

Fastelfoil HS200 Material Construction Options

Fastelfoil HS200 Series	0.001" heat seal adhesive	0.003" heat seal adhesive	0.005" heat seal adhesive
.0005" aluminum	FT1-AL05	FT3-AL05	FT5-AL05
.001" aluminum	FT1-AL1	FT3-AL1	FT5-AL1
.002" aluminum	FT1-AL2	FT3-AL2	FT5-AL2
.003" aluminum	FT1-AL3	FT3-AL3	FT5-AL3

Note: custom aluminum substrates and adhesive coating thicknesses available. Heat seal adhesive activation temperature for HS200 Series is 200°F/93°C

Fastelfoil HS200 Overall Material Construction

OPTIONAL FASTEL PRINT BACKING LAYER (C1S, CARDSTOCK, PET)
Aluminum Foil Carrier
Thermoplastic Adhesive Seal Layer

HS200 Series Overall thickness tolerance: +/- 10% of overall target thickness

Fastelfoil HS230 Material Construction Options

Fastelfoil HS230 Series	0.001" heat seal adhesive	0.003" heat seal adhesive	0.005" heat seal adhesive
.0005" aluminum	FM1-AL05	FM3-AL05	FM5-AL05
.001" aluminum	FM1-AL1	FM3-AL1	FM5-AL1
.002" aluminum	FM1-AL2	FM3-AL2	FM5-AL2
.003" aluminum	FM1-AL3	FM3-AL3	FM5-AL3

Note: custom aluminum substrates and adhesive coating thicknesses available. Heat seal adhesive activation temperature for HS230 Series is 230°F/110°C

Fastelfoil HS230 Overall Material Construction

OPTIONAL FASTEL PRINT BACKING LAYER (C1S, CARDSTOCK, PET)
Aluminum Foil Carrier
Thermoplastic Adhesive Seal Layer

HS230 Series Overall thickness tolerance: +/- 10% of overall target thickness

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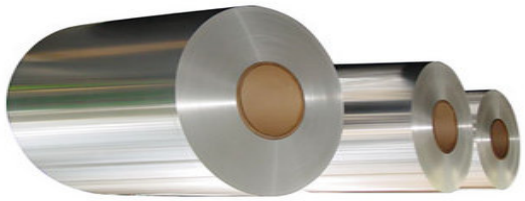

Fastelfoil HS250 Material Construction Options

Fastelfoil HS250 Series	0.001" heat seal adhesive	0.003" heat seal adhesive	0.005" heat seal adhesive
.0005" aluminum	FS1-AL05	FS3-AL05	FS5-AL05
.001" aluminum	FS1-AL1	FS3-AL1	FS5-AL1
.002" aluminum	FS1-AL2	FS3-AL2	FS5-AL2
.003" aluminum	FS1-AL3	FS3-AL3	FS5-AL3

Note: custom aluminum substrates and adhesive coating thicknesses available. Heat seal adhesive activation temperature for HS250 Series is 250°F/120°C

FastelFoil HS250 Overall Material Construction

OPTIONAL FASTEL PRINT BACKING LAYER (C1S, CARDSTOCK, PET)

Aluminum Foil Carrier

Thermoplastic Adhesive Seal Layer

HS250 Series Overall thickness tolerance: +/- 10% of overall target thickness

Fastelfoil PE250 Material Construction Options

Fastelfoil PE250 Series	0.001" PE Layer	0.003" PE Layer	0.005" PE Layer
.0005" aluminum	P1-AL05	P3-AL05	P5-AL05
.001" aluminum	P1-AL1	P3-AL1	P5-AL1
.002" aluminum	P1-AL2	P3-AL2	P5-AL2
.003" aluminum	P1-AL3	P3-AL3	P5-AL3

Note: custom aluminum substrates and PE thicknesses available. PE Layer minimum activation temperature is 250°F / 120°C

Fastelfoil PE250 Overall Material Construction

OPTIONAL FASTEL PRINT BACKING LAYER (C1S, CARDSTOCK, PET)

Aluminum Foil Carrier

Polyethylene Seal Layer

PE250 Series Overall thickness tolerance: +/- 10% of overall target thickness

Fastelfoil PP320 Material Construction Options

Fastelfoil PP320 Series	0.001" PP Layer	0.003" PP Layer	0.005" PP Layer
.0005" aluminum	PP1-AL05	PP3-AL05	PP5-AL05
.001" aluminum	PP1-AL1	PP3-AL1	PP5-AL1
.002" aluminum	PP1-AL2	PP3-AL2	PP5-AL2
.003" aluminum	PP1-AL3	PP3-AL3	PP5-AL3

Note: custom aluminum substrates and PP thicknesses available. PE Layer minimum activation temperature is 320°F / 160°C

Fastelfoil PP320 Overall Material Construction

OPTIONAL FASTEL PRINT BACKING LAYER (C1S, CARDSTOCK, PET)

Aluminum Foil Carrier

Bonding Layer (nominal)

Polypropylene Seal Layer

PP250 Series Overall thickness tolerance: +/- 10% of overall target thickness

Fastelfoil PET Material Construction Options

Fastelfoil PET Series	0.001" PET Layer	0.003" PET Layer	0.005" PET Layer
.0005" aluminum	PT1-AL05	PT3-AL05	PT5-AL05
.001" aluminum	PT1-AL1	PT3-AL1	PT5-AL1
.002" aluminum	PT1-AL2	PT3-AL2	PT5-AL2
.003" aluminum	PT1-AL3	PT3-AL3	PT5-AL3

Note: custom aluminum substrates and PET thicknesses available.

Fastelfoil PET Overall Material Construction

OPTIONAL FASTEL PRINT BACKING LAYER (C1S, CARDSTOCK, PET)

Aluminum Foil Carrier

Bonding Layer (nominal)

PET Seal Layer

PET Series Overall thickness tolerance: +/- 10% of overall target thickness

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Fastelfoil Typical Properties

Typical HS Series Characteristic	Fastelfoil HS Series
Adhesive Type	Thermoplastic
Melt Point Temperatures	160F (71C), 200F (93C), 230F (110C), 250F (120C)
Standard Roll Widths	6.00”, 12.00”, 16.00” (customs available)
Standard Roll Lengths	100ft, 250ft, 500ft
Minimum Slit Roll Width	0.125” (3.18cm)
Slit Roll Width Tolerance	+ /- 0.020” (0.50mm) Typical
Die Cut Dimensional Tolerances	+ /- 0.010” (0.25mm) Typical
Thickness Tolerance	+/- 10% of overall target thickness
Heating Method	Direct Heat or Induction Heating
Regulation	Indirect Food Contact

Typical PE Series Characteristic	Fastelfoil PE250 Series
Seal Type	Polyethylene
Melt Point	250F (120C)
Standard Roll Widths	6.00”, 12.00”, 16.00” (customs available)
Standard Roll Lengths	100ft, 250ft, 500ft, 1000ft
Minimum Slit Roll Width	0.125” (3.18cm)
Slit Roll Width Tolerance	+ /- 0.020” (0.50mm) Typical
Die Cut Dimensional Tolerances	+ /- 0.010” (0.25mm) Typical
Thickness Tolerance	+/- 10% of overall target thickness
Heating Method	Direct Heat or Induction Heating
Regulation	Meets FDA, Title 21, Part 177.1520

Typical PP Series Characteristic	Fastelfoil PP320Series
Seal Type	Polypropylene
Melt Point	320F (160C)
Standard Roll Widths	6.00”, 12.00”, 16.00” (customs available)
Standard Roll Lengths	100ft, 250ft, 500ft, 1000ft
Minimum Slit Roll Width	0.125” (3.18cm)
Slit Roll Width Tolerance	+ /- 0.020” (0.50mm) Typical
Die Cut Dimensional Tolerances	+ /- 0.010” (0.25mm) Typical
Thickness Tolerance	+/- 10% of overall target thickness
Heating Method	Direct Heat or Induction Heating

Customizable and Cost Effective

Induction & Heat Seal Foil Products

Fastelfoil Typical Properties

Typical PET Series Characteristic	Fastelfoil PE250 Series
Seal Type	PET
Standard Roll Widths	6.00”, 12.00”, 16.00” (customs available)
Standard Roll Lengths	100ft, 250ft, 500ft, 1000ft
Minimum Slit Roll Width	0.125” (3.18cm)
Slit Roll Width Tolerance	+ /- 0.020” (0.50mm) Typical
Die Cut Dimensional Tolerances	+ /- 0.010” (0.25mm) Typical
Thickness Tolerance	+/- 10% of overall target thickness
Heating Method	Induction Seal

Typical Aluminum Substrates	Fastelfoil All Types
Standard Aluminum Types	1100, 1145, 1235
Aluminum 1100 Series	1100 Series, QQA-1876
Standard Temper	O-Temper *
Custom Foil Substrate Available?	Yes—contact us at 1-888-989-3832

***** Standard FastelFoil products use either 1100, 1145 or 1235 in O-temper. Harder temper and higher tensile strength aluminum substrates such as HH and H19 available upon request.

Recommended Sealing Conditions	Direct Heat Sealing Recommendations	Induction Heating Recommendations
Fastelfoil HS160	*170°F to 180°F @ 3 to 10 psi*	*0.06 to 0.08 Seconds @ 100% power*
Fastelfoil HS200	*205°F to 225°F @ 3 to 10 psi*	*0.08 to 0.10 seconds @ 100% power*
Fastelfoil HS230	*240°F to 260°F @ 3 to 10 psi*	*0.10 to 0.12 seconds @100% power*
FastelFoil HS250	*255°F to 275°F @ 3 to 10 psi*	*0.12 to 0.14 seconds @ 100% power*
Fastelfoil PE250	*255°F to 275°F @ 3 to 10 psi*	*0.10 to 0.15 seconds @ 100% power*
Fastelfoil PP320	*330°F to 350°F @ 3 to 10 psi*	*0.25to 1 second @ 100% power*
Fastelfoil PET	*N/A*	*0.50 to 3 seconds @ 100% power*

Note: User testing should be performed to determine setup, heating temperature, pressure, materials being bonded and heating time to yield best installation results within the scope of your application requirements as well as sealing device being used. All information provided above is for reference only and to be used as a starting point for optimal application heating and sealing setup. The introduction of an additional print layer on top of foil substrate may vary recommended setup and application temperatures.

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

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

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Fastelfoil Typical Application Methods

The following diagrams illustrate basic setups using various commercially available heating methods. Fastelfoil can be heat applied using a variety of induction and heat seal methods including induction sealing machines, heated press, hot stamp, arm fixture with heated wire, foot press sealer, shrink wrap L Bar Sealer, heated rollers or custom fixture/heating device. Determining your optimal setup and heating method should be tested beforehand and is dependent on your substrates types and areas, setup pressure, heating device, heating time as well as Fastelfoil construction and thickness being used.

Commercially Available Devices

Heated Press

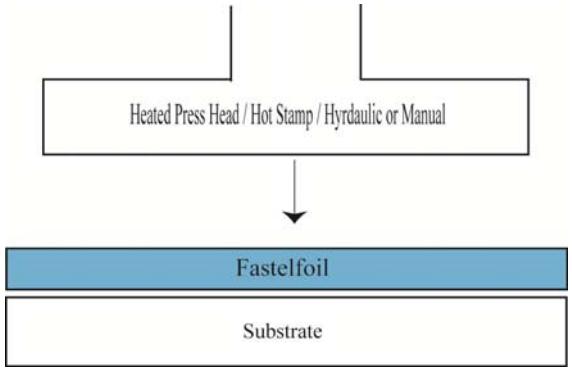
Induction/Die Cut Sealer

Hot Stamp & Wire Sealers

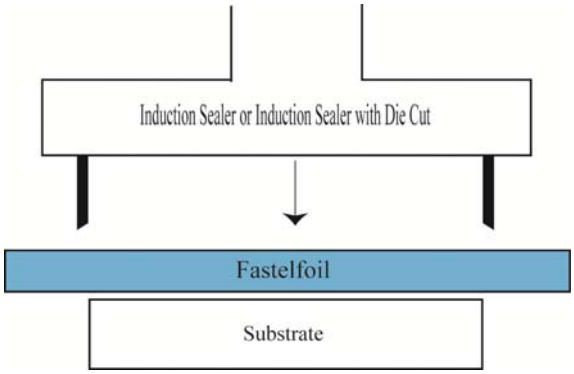
Induction Sealer

Foot Sealer

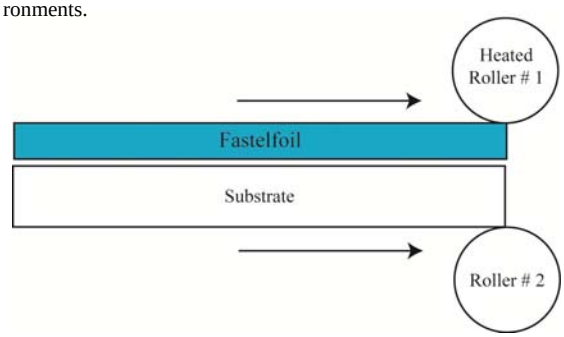
Apply heat using a heated press head or hot stamp device. Heat transfer through aluminum substrate. Good for low to mid volume applications.



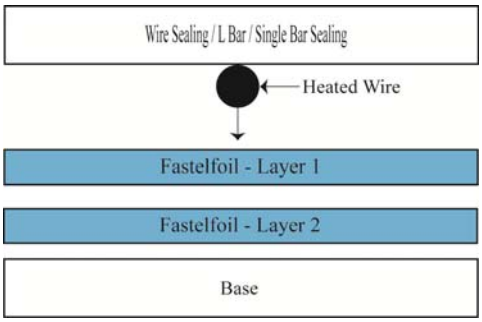
Apply heat or electrical current using an induction sealer (with or without die cut capabilities) through aluminum substrate. Good for mid to high volume applications.



Laminate Fastelfoil to a variety of surfaces using a top (or double) heated roller. Heat transfers through aluminum substrate. Good for large or continuous surface areas for mid to high application environments.



Create foil to foil seals using a heated wire system such as an L Bar or Foot Sealing Device. Ideal for sealing edges for creating foil bag/pouch or final edge seal on delivered foil bag.



Fastelfoil Testing & Sampling

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

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 for testing.