



# Sewfree®

## Adhesive Film & Tape

Eliminate stitching and guarantee the waterproof integrity of your technical outerwear garments and gear by using Sewfree® films and tape from Bemis. Sewfree® seams are sleeker and lighter than sewn seams, resulting in a less abrasive garment.

Whether you need to improve the performance or want to enhance the aesthetics of your product, Sewfree® films are an important component in the welding, bonding, sealing, or laminating process. Our adhesives have been specifically designed to meet the most stringent applications in outerwear. Significant testing, fabric analysis and an understanding of our customers' needs have resulted in a comprehensive product offering.

Welded, bonded, or laminated construction are all innovative and viable methods for manufacturing technical outerwear. The latest advancements in machinery and the increased sophistication of textiles make this technology a challenging science. We've created several formulas and forms of this specialty adhesive to give both designers and manufacturers the flexibility they need to make exciting and cost-effective bonded products. All of our films feature excellent washability and have good dry clean resistance.

From the basic film adhesive on release substrate in wide-width rolls to the carefully engineered tapes, there is a Sewfree® formula that will give you the results you need. There are a multitude of features and benefits from using film adhesives that can't be achieved with cut and sew methods.

### FEATURE

- Low profile film
- 100% thermoplastic, solvent-free
- Continuous film, not spray or powder
- Advanced adhesive chemistry
- Low temperature activation
- Soft hand characteristics
- Transparent film, not thread

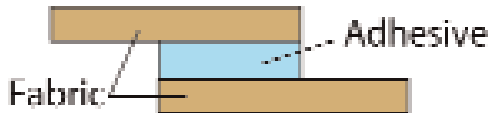


### BENEFIT

- Less abrasion, less bulk
- Eco-friendly
- Secure bond across entire surface area
- Both mechanical & chemical bonding that lasts
- Wider window of seal-ability, faster processing
- Mimics the stretch & recovery of selected fabric
- No color matching, reduces inventory complexity



## CONSTRUCTION METHODS

There are several methods for constructing a bonded garment, depending on the specific application or design you want to achieve. Some methods are better than others. For example a structural seam can be made with both a stationary fusing press and with a continuous process using a hot air sealer to reinforce an ultrasonically bonded seam. The continuous process is ideal because of the ease of positioning and throughput rates. Below is a chart describing the types of construction used with our Sewfree® adhesives and tapes.

Application	Type	Description	
Panel to Panel lamination	Overlap seam	In this seam construction, an adhesive film is used between two fabrics to bond face side to back side. Overlapped seams are usually 8-12mm wide.	
Panel to Panel lamination	Butt seam	This method uses an ultrasonic cutter or laser welding machine to trim and produce a butt joint between two fabrics. The resulting seam features an extremely small seam allowance. However, it has low cohesion and requires a reinforcing tape to strengthen it.	
Component Attachment & Assembly		A heat seal press or radio frequency sealer can be used to attach components to the garments. Pockets, zippers, patches, hood brims, storm flaps, cord tunnels, hems, and hook & loop attachments are examples of assemblies that can be made with Sewfree® adhesive films.	

## ADHESIVE FILM

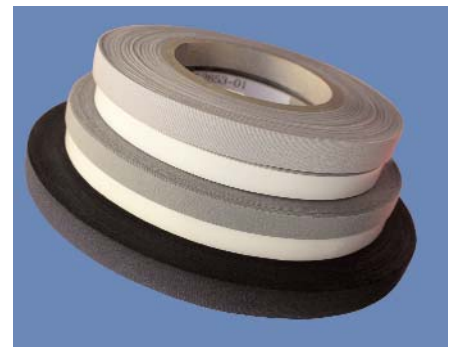
The Sewfree® formulas below are comprised of just an adhesive layer. These are typically used for overlap seams and component attachment. The films are deposited onto a release substrate and sold with the release substrate in tact. The release paper or liner is stripped away by machinery used to create an overlap seam, or is removed before the final bonding of components. These films can also be laminated to your selected fabric and/or custom slit to your specifications.



	3206D	3405	3410
<b>Composition</b>	Polyurethane	Polyurethane	Polyurethane
<b>Color</b>	Translucent	Translucent	Translucent
<b>Weight</b>	30 gm/m <sup>2</sup> per mil	31 gm/m <sup>2</sup> per mil	32 gm/m <sup>2</sup> per mil
<b>Nominal Thickness</b>	.002", .004", .006"	.003", .006"	.001", .002", .004"
<b>Substrate</b>	Release Paper or PE Liner	Release Paper	Release Paper or PE Liner
<b>Adheres To:</b>	Nylon, Polyester, Nylon/Spandex blends, Polyester/Spandex blends, Cotton, Poly-Cotton blends	PTFE coated fabrics, Vinyl, Polyurethane, Nylon, Polyester, Cotton, Poly-Cotton blends, Nylon/Spandex blends	Cotton, Nylon/Spandex, Poly-Cotton blends, Vinyl, Polyurethane coated fabrics
<b>Softening Point</b>	72°C 162°F	120°C 248°F	125°C 255°F
<b>Service Temperature</b>	-40°C to 75°C -40°F to 167°F	-40 °C to 90 °C -40 °F to 194 °F	-30°C to 130°C -22°F to 266°F
<b>Wash</b>	Excellent, up to 40°C water temperature	Excellent, up to 60°C water temperature	Excellent, up to 60°C water temperature
<b>Dry Clean</b>	Good	Good	Good

## SEAM REINFORCING TAPE (SRT)

The Sewfree® tapes below are designed to reinforce welded seams created by ultrasonics or laser equipment. Bemis' seam reinforcing tapes are extremely strong and come in a variety of configurations whether you're working with soft-shell, 2-layer or 3-layer fabrics. Welded seams are quickly becoming the technology of choice for fabrication because they feature an extremely low profile and there is virtually no seam allowance. Ultrasonically line bonded seams can be manufactured at the same efficiency rates as traditional cut and sew methods. An ultrasonically line bonded seam is sleek and less abrasive. However, the seam strength is weak and the seam is not entirely waterproof. Regardless of your fabric's content and processing parameters, tapes are required. Bemis' seam reinforcing tapes are narrow and can be applied to the seams to create superior seam strength and further weatherproof your product without adding bulk. SRTs can be applied using hot air sealers, ultrasonic machines and/or laser equipment.



	FOR SOFT SHELL FABRIC	FOR 2-LAYER FABRIC		FOR 3-LAYER FABRIC	
	SRT 1001	SRT 2002	SRT 2003	SRT 3001	SRT 3004
<b>Total Weight</b>	310 gm/m <sup>2</sup>	180 gm/m <sup>2</sup>	180 gm/m <sup>2</sup>	230 gm/m <sup>2</sup>	240 gm/m <sup>2</sup>
<b>Adhesive Weight</b>	180 gm/m <sup>2</sup>	90 gm/m <sup>2</sup>	90 gm/m <sup>2</sup>	150 gm/m <sup>2</sup>	150 gm/m <sup>2</sup>
<b>Nominal Thickness</b>	.014"	.010"	.010"	.012"	.011"
<b>Standard Widths</b>	10 mm	10 mm	10 mm	13 mm	13 mm
<b>Composition</b>	Polyurethane adhesive on stretch fabric	Polyurethane adhesive on grey fabric	Polyurethane adhesive on waterproof coating side of fabric	Polyurethane adhesive on polyester tricot	Polyurethane adhesive on woven fabric
<b>Color</b>	Black	White coating	White coating	Grey	Grey
<b>Finish or Appearance</b>	Stretch fabric	White coating, fabric is hidden	White coating, fabric is hidden	Tricot	woven nylon fabric
<b>Designed For:</b>	<b>water resistant</b> , soft shell fabrics, <b>non-waterproof</b> fabric	2-layer, <b>waterproof</b> hard shell fabrics	2-layer, <b>waterproof</b> hard shell fabrics	3-layer <b>waterproof</b> fabrics	3-layer <b>waterproof</b> hard shell fabrics
<b>Adhesive Softening Point</b>	72°C 162°F	85°C 185°F	85°C 185°F	120°C 248°F	120°C 248°F
<b>Service Temperature</b>	-40°C to 60°C -40°F to 140°F	-40°C to 60°C -40°F to 140°F	-40°C to 60°C -40°F to 140°F	-40°C to 80°C -40°F to 176°F	-40°C to 80°C -40°F to 176°F
<b>Wash</b>	Excellent at 40 °C water temperature	Excellent up to 60°C water temperature	Excellent up to 60°C water temperature	Excellent up to 60°C water temperature	Excellent up to 60°C water temperature
<b>Dry Clean</b>	Good	Good	Good	Good	Good
<b>Initial Processing Conditions:<sup>1</sup></b>					
<b>Air Temperature</b>	500° - 550 °C	500° - 550 °C	500° - 550 °C	575° - 650 °C	575° - 650 °C
<b>Air Pressure</b>	0.09 MPa	0.09 MPa	0.09 MPa	0.09 MPa	0.09 MPa
<b>Roller Pressure</b>	0.4 MPa	0.4 MPa	0.4 MPa	0.4 MPa	0.4 MPa
<b>Line Speed</b>	11 feet/minute 4 meters/minute	11 feet/minute 4 meters/minute	11 feet/minute 4 meters/minute	9 feet/minute 3 meters/minute	9 feet/minute 3 meters/minute
<b>Typical Seam Strength<sup>2</sup></b>	70+ lbs/inch 12.3 N/mm	50 lbs/inch 8.8 N/mm	50 lbs/inch 8.8 N/mm	25 lbs/inch 4.4 N/mm	30+ lbs/inch 5.3 N/mm

<sup>1</sup> Initial processing conditions are the recommended settings for using an H&H hot air sealer (seam taping machine). Conditions vary depending on your brand of equipment and your fabric selection.

<sup>2</sup> Typical seam strength values based on shear testing procedure (Bemis SF 003). A 1" (25.4 mm) sample is mounted on an Instron® Tensile Tester and pulled at 50mm/minute (2" /min). The seam strength is recorded at seam failure. Seam strength is dependent on fabrics and processing conditions.

Standard tapes listed here are manufactured and slit by Bemis. You can create your own tapes by laminating our adhesive to your own fabric ("self-fabric") and slitting to your desired widths. Colors listed are standard; contact one of our offices for custom fabrics or colors.

**Minimum order quantities apply.**

## WHY CHOOSE BEMIS

The adhesive film is the most important component when considering the use of bonded technology in your products. It's a collective effort to ensure your project will go smoothly. Our experience in the apparel industry and our technical expertise is unsurpassed by any other film supplier. Our technical centers are equipped with the latest machine innovations in the industry as well as a comprehensive inventory of tools for analysis. With over 30 engineers worldwide, quick and reliable data can be easily shared. From having the machinery that can produce the results you're looking for to finding a reliable and capable contractor that can handle this new technology, Bemis is a valuable partner.



*"Bemis is one of the best global suppliers for premium adhesive films. This component for strong bonding capacity allows one to race to the forefront of imaginative, innovative sew-free applications in garment design and construction. Their technical teams, based across three continents, provide guidance and solutions to support a company's product development as well as ensure proper use of their product."*

*Leona Cheung, Director of Sourcing & Production, EMS*

## MACHINE TECHNOLOGY

Bemis works with machine manufacturers across the globe to ensure that correct processing conditions are met and that the throughput rates of this machinery compare to cut and sew methods. Contact one of our main offices to discuss your requirements, we'll recommend a list of machine manufacturers that will make your bonded project a success.



## MANUFACTURING CAPABILITY

With three major technical centers worldwide and our years of experience in the apparel industry, we know what factories are capable of producing your product the best. We've worked closely with many, to educate and train them in this revolutionary technology. Some contractors are more committed than others in their investment in welding and bonding. Contact us to discuss your project and learn about the approach that would be ideal for you and your company.

## OTHER TAPES & FILMS



If you choose to utilize cut and sew methods for your technical outerwear, the selection of an appropriate seam sealing tape is paramount. **Seam tape is the critical link in the chain of water-proof protection.** Bemis offers the highest quality seam sealing tapes for waterproofing sewn seams. We offer co-extruded 2-layer, 2.5-layer and 3-layer tapes to satisfy a variety of applications and processing conditions.

We've also combined our adhesive chemistry with our experience in supplying decorative trim to offer decorative films and tapes. These films & fabrics can be custom slit to your specifications or cut to add distinctive embellishment to any design. In many cases, they also perform additional functions such as improving water and abrasion resistance.



**FOR MORE DETAIL, SAMPLES, OR TESTING, CONTACT ONE OF OUR OFFICES.**



[www.bemisworldwide.com](http://www.bemisworldwide.com)

*Bemis Associates, Inc.*  
One Bemis Way  
Shirley, MA 01464

**800.543.1324**

Outside the continental US:

Tel. +1 978 425 6761

Fax. +1 978 425 2278

*Bemis Associates UK*

Units 1-5

Turnpike Close

Grantham, Lincolnshire

United Kingdom NG31 7XU

Tel. +44 (0) 1476 594000

Fax +44 (0) 1476 576922

*Bemis Hong Kong Ltd.*

7th Floor, East Warwick House,

Taikoo Place, 979 King's Road,

Quarry Bay,

Hong Kong

Tel. +852 2785 5155

Fax. +852 2785 5455

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