

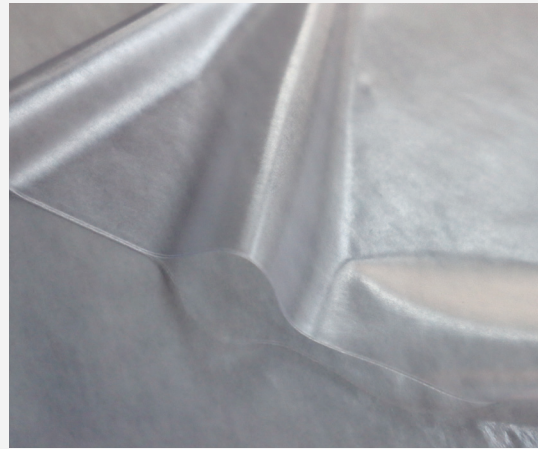


SEWFREE® ADHESIVES APPAREL SELECTOR GUIDE



bemisworldwide.com

BONDING IS THE NEXT GENERATION OF CUT AND CONSTRUCT



Bemis Sewfree® Adhesives revolutionize the design and construction of garments by replacing conventional stitching, bonding materials from the lightest fabrics to the hardest materials.

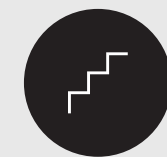
Sewfree® innovation goes beyond bonding to provide garments with customizable performance options - maximizing comfort and feel, enhancing aesthetic, streamlining production, replacing bulky elastics, and creating construction possibilities that are low-profile, lightweight, and durable.

SLEEKER LINES, SOFTER CORNERS, STRONGER SEAMS

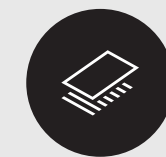


BEMIS SEWFREE® ADHESIVES DELIVER SUPERIOR CONSTRUCTION OPTIONS FOR YOUR DESIGNS AND ARE ENGINEERED FOR A VARIETY OF FABRICS AND APPLICATIONS

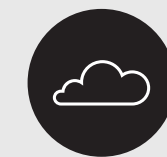
- Hems & Seams
- Waist & Bra Bands
- Collars & Necklines
- Bonded Baffles
- Bra Wings & Straps
- Patch-on Pockets
- Bonded Gussets & Panels
- Molding & Body Shaping
- Elastic Replacement
- Arm & Leg Openings
- Zippers & Other Trims
- Cuffs, Hoods, & Storm Flaps



CONSTRUCTION



LOW PROFILE



LIGHTWEIGHT



DURABLE



PERFORMANCE



BEMIS IS A BLUESIGN® SYSTEM PARTNER WITH EXTENSIVE EXPERIENCE IN PROVIDING FILM AND TAPE SOLUTIONS.

We continue to expand our portfolio of Bluesign® approved formulas, please use the Blueguide tool for our most up-to-date list of approved products.



MOST BEMIS SEWFREE® ADHESIVES ARE CERTIFIED TO THE OEKO-TEX STANDARD 100 AND ARE DEVELOPED TO MEET BRANDS' RESTRICTED SUBSTANCE REQUIREMENTS.

For more details on which items are certified, please contact your Bemis Sales Representative.

CALL YOUR BEMIS SALES REPRESENTATIVE FOR MORE INFORMATION AND SAMPLES

SEWFREE® ADHESIVE BONDING BASICS

SEWFREE® BONDING IS A COMPLETE ECOSYSTEM OF HIGH-PERFORMANCE PRODUCTS AND SERVICES. BEMIS HAS NUMEROUS SEWFREE® ADHESIVES TO MEET DIFFERENT BONDING NEEDS AND OUR PRODUCTS COME IN ALL SHAPES AND SIZES



Bemis Sewfree® adhesives are manufactured and arrive as a clear, solid film on rolls that require heat to activate.

In full width, our rolls can range from 1372mm to 1524mm (54" - 60") and we offer slitting services with some products stocked at commonly slit widths such as 6mm, 8mm, or 10mm.

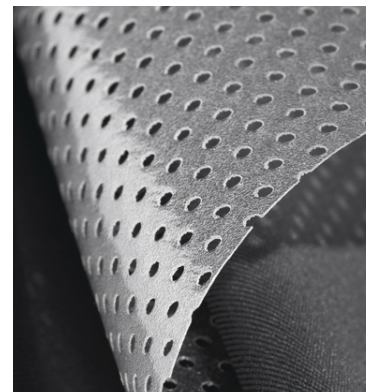


While most Sewfree® products come rolled with a silicone coated paper liner or PET liner, some other products arrive without a liner.

Call your Bemis Sales Representative for more information on product customization such as:

Flowfree™: perforation options that promote and increase breathability

Versafilm™: customized engineered patterns that deliver breathability and enhanced aesthetics



CRITICAL FACTORS IN ADHESION

CHEMISTRY



Chemical properties must be a good match with the substrate.

TEMPERATURE



Heat is required to melt the adhesive which initiates the bond.

PRESSURE



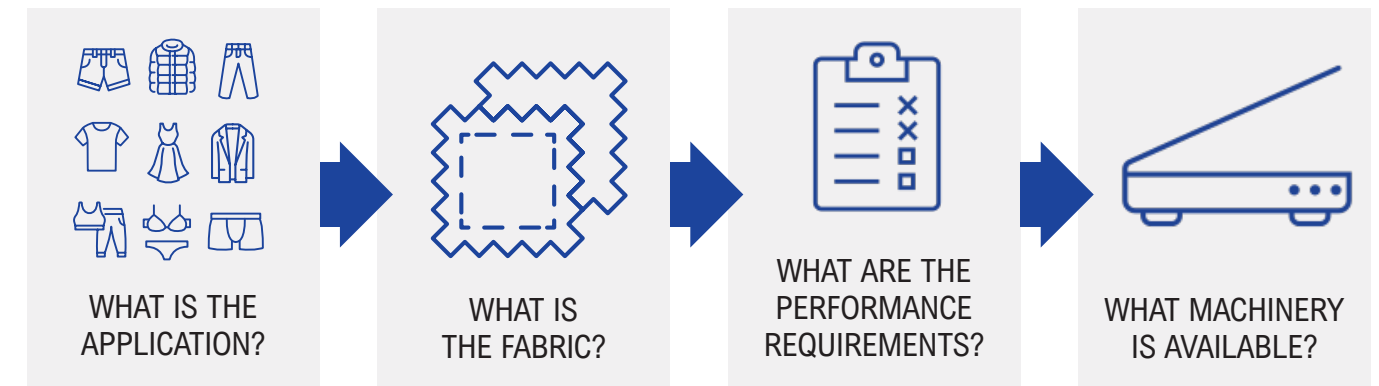
Pressure forces melted adhesive into the substrate creating a strong bond.

DWELL TIME



Appropriate time under heat and pressure ensures successful bonds.

SELECTING THE RIGHT SEWFREE®



HEAT SEAL PRESS



Zippers
Overlap Seams
Pockets
Hemming
Panel Bonding

BELT LAMINATOR



Wide Width Lamination
Pockets
Panel Bonding

HOT AIR MACHINE



Initial Tacking
Hemming
Seams

HAND IRON



Initial Tacking

CONTINUOUS MACHINE



Initial Tacking
Hemming
Side Seams

TECHNICAL DATA

	3412 Sewfree® Adhesive	SE6410 Sewfree® Elevation	SE6412 Sewfree® Elevation Advanced	3913 3914 3916 3926 3918 High Recovery Adhesive	7002SH TruFit Sewfree® Adhesive	3400N Terra Sewfree® Adhesive	BFF3001 Bemis Flowfree™ Pro	BFF3000 Bemis Flowfree™ Base
PRODUCT OVERVIEW								
Key Benefits	Stretch Adhesive High Activation Temperature Low Modulus / Very High Recovery Enhanced Durability Delivers technical benefits resulting in impeccable fit	Soft & Light Stretch Adhesive Low Activation Temperature Low Modulus / Very High Recovery Designed to create lower profile and more comfortable garments	Softest & Lightest Stretch Adhesive Low Activation Temperature Low Modulus / Very High Recovery UV Resistant Designed for next-to-skin applications where all day comfort is required	Three-Layer Stretch Adhesive Low Activation Temperature Medium-High Modulus / Very High Recovery Elastic Replacement / extended wear comfort Polyurethane / Elastic / Polyurethane stack-up variations for desired modulus requirements 3913: 75 µm (.003"), 1mil/1mil/1mil 3914: 100 µm (.004"), 1mil/2mil/1mil 3916: 150 µm (.006"), 1mil/4mil/1mil 3926: 150 µm (.006"), 2mil/2mil/2mil 3918: 200 µm (.008"), 1mil/6mil/1mil	Three-Layer Stretch Adhesive High Activation Temperature High Modulus / High Recovery Elastic Replacement Designed to maintain original fit, shape, and softness versus standard adhesives and to reduce any 'wave' or 'baconing' appearance	Stretch Adhesive Low Activation Temperature Medium Modulus / High Recovery Enhanced Durability Engineered to allow the breathability of Natural Fiber fabric	Perforated Stretch Adhesive High Activation Temperature Low Modulus / Very High Recovery Elastic and Mesh Replacement Engineered to enhance breathability and release moisture	Perforated Stretch Adhesive Low Activation Temperature Medium Modulus / High Recovery Elastic and Mesh Replacement Engineered to enhance breathability and release moisture
Material Adhesion	A variety of fabrics and materials including Nylon, Polyester, Spandex Blends, and Cotton Blends	A variety of fabrics and materials including Nylon, Polyester, Spandex Blends, Cotton Blends, and Wool as well as heat sensitive fabrics	A variety of fabrics and materials including Nylon, Polyester, Spandex Blends, Cotton Blends, and Wool as well as heat sensitive fabrics	A variety of fabrics and materials including Nylon, Polyester, Spandex Blends, and Cotton Blends	A variety of fabrics and materials including Nylon, Polyester, Spandex Blends, and Cotton Blends	Specifically formulated for Natural Textiles like Wool, Cotton, and Cellulose Fiber	A variety of fabrics and materials including Nylon, Polyester, Spandex Blends, and Cotton Blends	A variety of fabrics and materials including Nylon, Polyester, Spandex blends, Cotton blends, and heat sensitive fabrics as well as PU and PU/vinyl coated textiles
Suggested Use	Performance Wear Intimates	Performance Wear Intimates	Performance Wear Intimates	Performance Wear Intimates	Performance Wear Intimates	Technical Outerwear Performance Wear Intimates	Performance Wear Intimates	Performance Wear Intimates
Hand Feel	Very Soft	Softest	Softest	Very Soft	Very Soft	Very Soft	Very Soft	Soft
Flowfree™ Technology¹	Ask your Bemis Sales Rep about this custom option	Ask your Bemis Sales Rep about this custom option	Available Product BFF6412 Flowfree™ Elevation	Available Products Flowfree™ Advanced	Available Product BF7002SH Flowfree™ TruFit	Available Product BFF3400N Flowfree™ Terra	Made with Flowfree™ Technology	Made with Flowfree™ Technology
THERMAL & PHYSICAL PROPERTIES								
Composition	Ester Polyurethane	Elastomer	Elastomer	Polyurethane / Elastic / Polyurethane	Polyurethane / Spandex / Polyurethane	Polyurethane	Ester Polyurethane	Ester Polyurethane
Gauge(s)²	25 µm (.001") - 100 µm (.004") and 150 µm (.006")	50 µm (.002"), 75 µm (.003"), 100 µm (.004")	200 µm (.008")	See Above	200 µm (.008")	100 µm (.004")	50 µm (.002"), 100 µm (.004")	50 µm (.002"), 100 µm (.004")
Adhesive Weight	30 g/m2 (per 25 µm)	25 g/m2 (per 25 µm)	23 g/m2 (per 25 µm)	30 g/m2 (per 25 µm)	30 g/m2 (per 25 µm)	31 g/m2 (per 25 µm)	27.7 g/m2 (per 25 µm)	27.7 g/m2 (per 25 µm)
Softening Point	115°C (239°F)	87.9°C (190°F)	87.9°C (190°F)	95°C (203°F)	115°C (239°F)	95°C (203°F)	115°C (239°F)	83°C (181°F)
Melt Flow Index	34 dg/min at 175°C / 2.16 kg	37 dg/min at 175°C / 2.16 kg	37 dg/min at 175°C / 2.16 kg	45 dg/min at 175°C / 2.16 kg	34 dg/min at 175°C / 2.16 kg	45 dg/min at 175°C / 2.16 kg	34 dg/min at 175°C / 2.16 kg	45 dg/min at 175°C / 2.16 kg
Glue Line Temperature³	140°C to 170°C (284°F to 338°F)	130°C to 135°C (266°F to 275°F)	130°C to 135°C (266°F to 275°F)	120°C to 165°C (248°F to 329°F)	140°C to 170°C (284°F to 338°F)	110°C to 140°C (230°F to 284°F)	140°C to 170°C (284°F to 338°F)	110°C to 140°C (230°F to 284°F)
DURABILITY TESTING								
Wash/Dry	Excellent up to 60°C	Excellent up to 60°C	Excellent up to 60°C	Excellent up to 60°C	Excellent up to 60°C	Excellent up to 60°C	Excellent up to 60°C	Excellent up to 60°C
<i>MODULUS & RECOVERY OF 25.4MM (1") WIDE SAMPLE Tested on adhesives alone. Keep in mind Modulus & Recovery does change based on the fabric the adhesive is bonded to.</i>								
Gauge Tested	50 µm (.002")	75 µm (.003")	200 µm (.008")	Item Dependent	200 µm (.008")	100 µm (.004")	100 µm (.004")	100 µm (.004")
at 40%	0.4 lbf/in	0.3 lbf/in	0.64 lbf/in	Range: 0.9 lbf/in - 2.4 lbf/in	0.67 lbf/in	1.1 lbf/in	0.42 lbf/in	0.92 lbf/in
at 100%	0.8 lbf/in	0.5 lbf/in	0.97 lbf/in	Range: 1.4 lbf/in - 4.0 lbf/in	1.2 lbf/in	2.2 lbf/in	0.64 lbf/in	1.12 lbf/in
Recovery⁴	99%	100%	99.7%	Range: 99% - 100%	98.5%	97%	100%	97%
RECOMMENDED BONDING CONDITIONS⁵								
FLAT PRESS								
Temperature	150°C to 170°C	140°C to 150°C	140°C to 150°C	130°C to 165°C	145°C to 185°C	130°C to 150°C	120°C to 135°C	150°C to 170°C
Time	20 to 30 seconds	30 to 40 seconds	30 to 40 seconds	20 to 30 seconds	15 to 35 seconds	15 to 25 seconds	20 to 30 seconds	20 to 30 seconds
Pressure	40 to 60 psi (2.8 to 4.2 bar)	45 to 55 psi (3.0 to 4.0 bar)	45 to 55 psi (3.0 to 4.0 bar)	40 to 60 psi (2.8 to 4.2 bar)	43.5 to 72.5 psi (3.0 to 5.0 bar)	40 to 60 psi (2.8 to 4.2 bar)	40 to 60 psi (2.8 to 4.2 bar)	40 to 60 psi (2.8 to 4.2 bar)
CONTINUOUS BONDING MACHINE								
Temperature	250°C to 300°C	180°C to 300°C	180°C to 300°C	150°C to 200°C	180°C to 250°C	200°C to 250°C	250°C to 300°C	200°C to 250°C
Pressure	14.3 psi (1.0 bar)	2.8 psi (4.1 bar)	2.8 psi (4.1 bar)	29.0 psi (2.0 bar)	20 to 28 psi (1.5 to 2.0 bar)	14.3 psi (1.0 bar)	14.3 psi (1.0 bar)	14.3 psi (1.0 bar)
Speed	1.5 to 2.0 m/min	1.0 to 5.0 m/min	1.0 to 5.0 m/min	1.0 to 1.5 m/min	0.8 to 1.5 m/min	1.5 to 2.0 m/min	1.5 to 2.0 m/min	1.5 to 2.0 m/min

FOOTNOTES

¹ Contact your Bemis Sales Representative for more detail and data on Bemis Flowfree™ technology.

² Custom gauges may be available.

³ Glue Line Temperature relates to the temperature the adhesive must reach during bonding to achieve optimal bond strength.

⁴ Recovery after 100% Elongation at a rate of 508mm (20") per minute.

⁵ Recommended bonding conditions will vary between machinery, fabrics and applications. Optimal bonding conditions should be established by Bemis and the customer for each application prior to production.

TECHNICAL DATA

	3410 Sewfree® Adhesive	3415 Sewfree® Adhesive	3405 Sewfree® Adhesive	3206 Sewfree® Adhesive	3700 Bio-Based Sewfree® Adhesive	3840 Nylock™	3218 Sewfree® Adhesive	5256 Sewfree® Adhesive	5274 Sewfree® Adhesive	EverFit™ 6430
PRODUCT OVERVIEW										
Key Benefits	Very High Activation Temperature Medium Modulus / High Recovery Excellent Durability Engineered for applications where molding may be required	Low Activation Temperature Medium Modulus / High Recovery Enhanced Durability Designed to be used on heat sensitive fabrics	High Activation Temperature Medium Modulus / High Recovery Enhanced Durability Designed to be used on a variety of materials including DWR coated fabrics	Very Low Activation Temperature Dry Clean Resistant Versatility Engineered to add durability in products that need to withstand daily wear and tear	High Activation Temperature Low Modulus / High Recovery Enhanced Durability Ability to Mold USDA BioPreferred® Our first Bio-Based adhesive is generated from 25% corn-based feedstock	Very Low Activation Temperature Excellent bond to many finishes/surfaces Engineered for Nylon and other lightweight, Outerwear fabrics (5D to 50D)	Low Activation Temperature Easy Handling and Positioning Dry Clean Resistant Designed to be used on a variety of materials including DWR coated fabrics	High Activation Temperature Adds Structural Strength Provides Rigidity Designed to be used on a variety of materials including DWR coated fabrics Supports mechanical recycling process of mono-material polyester garments	Low Activation Temperature Adds Structural Strength Fast Flowing Adhesive Engineered for strong adhesion to polyester fabrics Supports mechanical recycling process of mono-material polyester garments	Designed for low modulus, very good stretch and recovery applications. Very soft hand feel, making it ideal for close to skin applications
Material Adhesion	A variety of fabrics and materials including Nylon, Polyester, Spandex Blends, and Cotton Blends	A variety of fabrics and materials including Nylon, Polyester, Spandex Blends, Cotton Blends, and heat sensitive fabrics as well as PU and PU/Vinyl coated textiles	A variety of fabrics and materials including Polyester, Cotton Blends, and Spandex Blends as well as DWR coated and PU and PU/Vinyl coated textiles	A variety of fabrics and materials including Nylon, Polyester, Spandex Blends, and Cotton Blends as well as PU and PU/Vinyl coated textiles	A variety of fabrics and materials including Nylon, Polyester, Spandex Blends, Cotton Blends, and heat sensitive fabrics as well as PU and PU/Vinyl coated textiles	Excellent bond to specialty fabrics such as tightly woven Nylons and other lightweight fabrics (5D to 50D) as well as DWR coated fabrics	A variety of fabrics and materials including Nylon, Polyester, Spandex Blends, and Cotton Blends as well as PU and PU/Vinyl coated textiles	Excellent adhesion to Polyester, Polyester/Cotton Blends, and other blended fabric substrates	Excellent adhesion to Polyester and Leather as well as Smooth Surface Plastic materials	Excellent adhesion to stretch and non stretch fabrics, including elastane nylon and polyester blends, polyester/cotton blends and other blended fabric
Suggested Use	Performance Wear Intimates	Technical Outerwear Performance Wear Intimates	Technical Outerwear Performance Wear	Technical Outerwear Intimates	Technical Outerwear Performance Wear Intimates	Technical Outerwear	Technical Outerwear	Technical Outerwear	Technical Outerwear	Intimates and performance wear
Hand Feel	Soft	Soft	Soft	Soft	Soft	Soft	Stiff	Stiff	Stiff	Soft
Flowfree™ Technology¹	Ask your Bemis Sales Rep about this custom option	Ask your Bemis Sales Rep about this custom option	Ask your Bemis Sales Rep about this custom option	Ask your Bemis Sales Rep about this custom option	Ask your Bemis Sales Rep about this custom option	Ask your Bemis Sales Rep about this custom option	Ask your Bemis Sales Rep about this custom option	Ask your Bemis Sales Rep about this custom option	Ask your Bemis Sales Rep about this custom option	Ask your Bemis Sales Rep about this custom option
THERMAL & PHYSICAL PROPERTIES										
Composition	Ester Polyurethane	Ester Polyurethane	Ester Polyurethane	Polyurethane	Polyurethane	Polyurethane	Ester Polyurethane	Polyester	Polyester	Thermoplastic Elastomer
Gauge(s)²	19 µm (.0007"), 25 µm (.001"), 50 µm (.002")	25 µm (.001") - 150 µm (.006")	75 µm (.003"), 150 µm (.006"), 225 µm (.009")	50 µm (.002"), 100 µm (.004"), 150 µm (.006")	50 µm (.002"), 100 µm (.004")	50 µm (.002"), 100 µm (.004")	25 µm (.001") - 75 µm (.003") and 125 µm (.005")	75 µm (.003"), 125 µm (.005"), 175 µm (.007")	75 µm (.003")	252 µm (0.10"), 354 µm (.14")
Adhesive Weight	31 g/m2 (per 25 µm)	31 g/m2 (per 25 µm)	31 g/m2 (per 25 µm)	30 g/m2 (per 25 µm)	31 g/m2 (per 25 µm)	30 g/m2 (per 25 µm)	29 g/m2 (per 25 µm)	30 g/m2 (per 25 µm)	30 g/m2 (per 25 µm)	25 g/m2 (per 25 µm)
Softening Point	130°C (266°F)	83°C (181°F)	120°C (248°F)	75°C (167°F)	120°C (248°F)	50°C (122°F)	92°C (198°F)	125°C (257°F)	75°C (167°F)	90°C (194°F)
Melt Flow Index	10 dg/min at 175°C / 2.16 kg	45 dg/min at 175°C / 2.16 kg	25 dg/min at 175°C / 2.16 kg	50 dg/min at 175°C / 2.16 kg	10 dg/min at 175°C / 2.16 kg	15 dg/min at 150°C / 2.16 kg	15 dg/min at 175°C / 2.16 kg	22 dg/min at 175°C / 2.16 kg	125 dg/min at 175°C / 2.16 kg	2.5 dg/min at 150°C / 2.16 kg
Glue Line Temperature³	160°C to 190°C (320°F to 374°F)	110°C to 140°C (230°F to 284°F)	150°C to 170°C (302°F to 338°F)	110°C to 120°C (230°F to 248°F)	145°C to 165°C (293°F to 329°F)	120°C to 140°C (248°F to 284°F)	120°C to 130°C (248°F to 266°F)	149°C to 191°C (300°F to 376°F)	100°C to 160°C (212°F to 320°F)	138°C to 143°C (280°F to 289°F)
DURABILITY TESTING										
Wash/Dry	Excellent up to 60°C	Excellent up to 60°C	Excellent up to 60°C	Excellent up to 40°C / Dry Cleaning Resistant	Excellent up to 60°C	Excellent up to 40°C / Tumble Dry Low	Excellent up to 40°C	Excellent up to 60°C / Dry Cleaning Resistant	Excellent up to 40°C	Excellent up to 60°C
<i>MODULUS & RECOVERY OF 25.4MM (1") WIDE SAMPLE Tested on adhesives alone. Keep in mind Modulus & Recovery does change based on the fabric the adhesive is bonded to.</i>										
Gauge Tested	50 µm (.002")	50 µm (.002")	75 µm (.003")	50 µm (.002")	100 µm (.004")	100 µm (.004")	75 µm (.003")	125 µm (.005")	100 µm (.004")	354 µm (.014")
at 40% of Original Length	1.0 lbf/in	0.8 lbf/in	1.4 lbf/in	1.7 lbf/in	0.8 lbf/in	0.45 lbf/in	3.9 lbf/in	11.8 lbf/in	2.0 lbf/in	0.56 lbf/in
at 100%	1.6 lbf/in	1.4 lbf/in	2.0 lbf/in	2.0 lbf/in	1.08 lbf/in	0.5 lbf/in	3.6 lbf/in	19.1 lbf/in	2.0 lbf/in	0.95 lbf/in
Recovery⁴	97%	96%	97%	90%	97%	88%	71%	81%	93%	100%
RECOMMENDED BONDING CONDITIONS⁵										
FLAT PRESS										
Temperature	170°C to 190°C	120°C to 130°C	150°C to 170°C	120°C to 130°C	150°C to 170°C	120°C to 140°C	130°C to 140°C	160°C to 200°C	105°C to 170°C	140°C to 160°C
Time	20 to 30 seconds	20 to 30 seconds	20 to 30 seconds	15 to 20 seconds	20 to 30 seconds	15 to 30 seconds	20 to 30 seconds	15 to 20 seconds	15 to 30 seconds	30 to 60 seconds
Pressure	40 to 60 psi (2.8 to 4.2 bar)	40 to 60 psi (2.8 to 4.2 bar)	40 to 60 psi (2.8 to 4.2 bar)	40 to 60 psi (2.8 to 4.2 bar)	40 to 60 psi (2.8 to 4.2 bar)	40 to 60 psi (2.8 to 4.2 bar)	40 to 60 psi (2.8 to 4.2 bar)	40 to 60 psi (2.8 to 4.2 bar)	40 to 60 psi (2.8 to 4.2 bar)	40 to 60 psi (2.8 to 4.2 bar)
CONTINUOUS BONDING MACHINE										
Temperature	Not Recommended	200°C to 250°C	Not Recommended	200°C to 250°C	Not Recommended	248°C to 284°C	200°C to 250°C	Not Recommended	Not Recommended	200°C to 250°C
Pressure		14.3 psi (1.0 bar)		14.3 psi (1.0 bar)		14.3 psi (1.0 bar)				
Speed		1.5 to 2.0 m/min		1.5 to 2.0 m/min		1.5 to 2.0 m/min				

FOOTNOTES

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² Custom gauges may be available.

³ Glue Line Temperature relates to the temperature the adhesive must reach during bonding to achieve optimal bond strength.

⁴ Recovery after 100% Elongation at a rate of 508mm (20") per minute.

⁵ Recommended bonding conditions will vary between machinery, fabrics and applications. Optimal bonding conditions should be established by Bemis and the customer for each application prior to production.