

VELCRO® Brand products are available with a variety of adhesives to best fit your application.

Before using an adhesive for production it should be tested to determine the suitability of the product for its intended use. Please note that this guide covers our most popular adhesives – contact us if you have special requirements.

Types of Adhesive Systems

Woven VELCRO® Brand tapes have a binder coat which firmly locks hooks and loops in place and helps prevent fraying of the tapes when cut. Due to this coating, many commercially available adhesives will not readily adhere to the back of the woven tape. Therefore, the use of a VELCRO® Brand pre-coated adhesive backing is recommended.

Pressure Sensitive Adhesives

Pressure sensitive adhesives are popular because of the ease of application. Simply remove the release liner and press the VELCRO® Brand tape in place. Pressure sensitive adhesives should always be considered semi-permanent bonds. VELCRO® Brand pressure sensitive adhesives have been engineered to offer specific performance characteristics to meet different requirements.

Solvent and Heat Activated Adhesives

Solvent and heat activated adhesives, on most VELCRO® Brand hook and loop tapes, provide the strongest bond to the tape itself and can be made ready for instant bonding by many easy methods of application (e.g. solvent, heat, ultrasonic, dielectric).

Surface Preparation

It is important that all surfaces be thoroughly cleaned before applying VELCRO® Brand adhesives. All cleaning agents should be tested prior to use to ensure the cleaning agent will not have adverse effects on the substrate. In some circumstances, isopropyl alcohol (rubbing alcohol) may be a sufficient cleaning agent. Citrus cleaners are not recommended.

Your Plant Conditions

It is important to work in an area that is clean and free from dirt and dust in the air. The adhesive should be applied at room temperature with ideal room temperature between 65°F and 75°F and relative humidity 40% to 65%. Please note, the lower the humidity, the better the bond. Excessive cold, heat, dirt, and relative humidity will be detrimental to your adhesive performance. If adhesive must be applied at temperatures lower than 65°F, warm the substrate and the tape to elevate temperature prior to applying. This may help the adhesive cure. If using VELCRO® Brand 72 adhesive, allow full curing time before loading or cycling. It is also essential to have a well ventilated area to remove fumes and odors for the safety and comfort of your employees, and as required by your local and OSHA standards.

Limitations

VELCRO® Brand adhesives are not recommended for submersion in water or on plastics with high concentrations of plasticizers. Adhesives are not washable or dry cleanable.



Pressure Sensitive Adhesives

Acrylic Pressure Sensitive Adhesives

Acrylic pressure sensitive adhesives offer good shear strength, environmental resistance, and have good adhesion to most metal and medium/high surface energy plastics.

VELCRO® Brand Adhesive 72

- Formulated for high temperature performance and superior bond strength
- Moderate tack - medium set up
- Full bond strength in 24 hours
- Temperature operating range -20°F to 225°F

VELCRO® Brand Adhesive 75

- Formulated for vinyl substrates
- Moderate tack - medium set up
- Full bond strength in 24 hours
- Temperature operating range -20°F to 230°F

Synthetic Rubber Pressure Sensitive Adhesives

Rubber-based pressure sensitive adhesives have good adhesion to low surface energy substrates. They should be used indoors, at room temperature.

VELCRO® Brand Adhesive 13

- Formulated especially for resistance to light moisture
- High tack - quick setting
- Achieves 80% bond strength in an hour; full strength in 24 hours
- Temperature operating range -20°F to 180°F

VELCRO® Brand Adhesive 19

- Formulated especially for low energy plastics
- High tack - quick setting
- Achieves 80% bond strength in an hour; full strength in 30 hours
- Temperature operating range -40°F to 185°F

VELCRO® Brand Adhesive 15

- Formulated for many substrates, especially uneven or rough surfaces
- High tack - quick setting
- Achieves 80% bond strength in about an hour; full strength in 30 hours
- Temperature operating range -40°F to 120°F
- Recommended for most room temperature applications

VELCRO® Brand Adhesive 32

- Formulated for many substrates
- High tack - quick setting
- Achieves 80% bond strength in an hour; full strength in 30 hours
- Recommended for most room temperature applications

Solvent Activated Adhesives

Solvent activated adhesives are recommended for applications where a more permanent bond is desired. Dry to the touch, these adhesives become tacky upon activation using solvents.

VELCRO® Brand Adhesive 40

- Activated by MEK, acetone, or MCL
- Can also be used with liquid adhesive or ultrasonically welded when porous substrates exist
- Ultimate bond strength is achieved in 24 hours
- Temperature operating range -40°F to 250°F

Bonding Method Notes

If substrate is a non-porous smooth surface, apply the recommended solvent activator freely to the back of the VELCRO® Brand tape with a brush or sponge applicator and allow the adhesive to become tacky. When tacky, position the tape on a cleaned substrate using finger pressure to smooth tape. (This is most important on edges and corners.) Follow a few minutes later with additional hand pressure to ensure a complete bond. Let dry overnight or speed up drying with 140°F heat source. Please be sure to use appropriate safety precautions when using a solvent activator (i.e. proper ventilation, gloves, etc.)

Heat Activated Adhesives

Heat activated adhesives are recommended for applications where a more permanent bond is desired. Dry to the touch, these adhesives become tacky upon activation using RF welding or ironing.

VELCRO® Brand Adhesive 43

- Activated using ultrasonic and dielectric (RF) machinery, iron-on heat, or other common heat generating equipment.
- Will bond to a wide range of fabrics and plastics and has excellent water resistance
- Ultimate bond strength is achieved in 24 hours
- Temperature operating range -40°F to 160°F

Bonding Method Notes

For Ultrasonic Precoated tape should be positioned on top of substrate. A perimeter weld at least 1/8" wide should be used to prevent peel delamination. Machine settings including pressure, weld, and dwell (hold time) should be varied according to weld patterns, materials utilized and bond strength desired.

For Dielectric (RF) Precoated tape should be positioned on top of substrate (commonly vinyl). A perimeter weld at least 1/8" wide should be used to prevent peel delamination. Machine settings including energy level, preseal, seal, and cool times may vary according to weld patterns and materials being used.

For Iron-On Substrate (commonly fabric) should be positioned on top of coated tape. Pass a warmed iron over substrate several times at incremental heat settings until adhesive softens onto substrate. Do not allow adhesive to contact hot iron surface. Allow to cool before hand peel testing.

Recommendations for Different Types of Surfaces

Here are some additional recommendations to improve the surface area of a variety of substrates for better adhesion.

Porous Substrate

This type of surface is one that requires a primer or sealer to provide a suitable bonding area. Allow the treated surface to dry completely before applying your VELCRO® Brand adhesive backed tape. Better adhesion may be obtained when used with a liquid adhesive.

Non-Porous Substrate

VELCRO® Brand Adhesive 40 is suitable for non-porous substrates. Better adhesion may also be obtained when used together with a liquid adhesive.

Smooth Surfaces

Improved bonding can be achieved by roughing up a smooth surface before applying adhesive.

Weak Substrate

Paper is a good example of a weak substrate. If the surface is weak, reinforcing the substrate with additional coverage of a liquid adhesive may improve performance.

		VELCRO® Brand Adhesive Number and Type							
Substrate	Surface Energy of Substrate	Synthetic Rubber				Acrylic		Solvent Activated	Heat Activated
		13	15	19	32	72	75	40	43
ABS	High	2	1	1		3	3	1	3
Acrylic	High	1	1	1		3	3	1	3
Aluminum	High	1	1	1	1	2	3	NR	NR
ELPO (Painted Steel)	High	1	1	1		3	3	NR	NR
Fabric	High	NR	NR	NR		NR	NR	NR	3
Glass	High	NR	NR	NR	1	3	3	NR	NR
HDPE	Low	1	2	1		NR	NR	NR	NR
LDPE	Low	1	2	1		NR	NR	NR	NR
Plywood	-	3	2	3		NR	NR	NR	NR
Polycarbonate	High	1	1	1	1	2	3	NR	NR
Polyester (Fiberglass)	High	2	2	1	1	3	NR	NR	NR
Polypropylene	Low	2	2	2	NR	NR	NR	NR	NR
Urethane TPU Film	Low	3	NR	2	3	2	NR	NR	2
Vinyl, Flexible	Low	NR	NR	NR		NR	1	1	3
Vinyl, Rigid	High	NR	NR	NR	1	2	1	1	3

Legend: 1-Best 2-Better 3-Good NR-Not recommended



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