

VELCRO® Brand

# Hook 88/Loop 1000, with 72 Adhesive System

## Technical Data Sheet

May 2013

### Product Description

VELCRO® Brand Hook 88 is a woven nylon hook, designed for high cycle life (when mated with Loop 1000) and a wide range of applications. It is woven from nylon yarns and is an adhesive-backed product available in widths up to six inches.

VELCRO® Brand Loop 1000 is a woven napped nylon loop designed for high cycle life (when mated with Hook 88) and wide variety of applications. It is woven from nylon yarns and is an adhesive-backed product available in widths up to six inches.

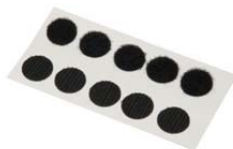
Adhesive 72 is a general purpose acrylic based pressure sensitive adhesive.

VELCRO® Brand Loop 1000 and Hook 88 has been used in applications ranging from packaging, medical, industrial, transportation, to consumer, and should be considered as an option for applications that require durability, long life, and consistent performance.

### Product Construction

The following information should be considered typical and is intended to be used as a reference only. This information should not be used for specification purposes. Suitable performance for a specific intended application should be evaluated by the user.

Fastener	VELCRO® Brand Loop 1000	VELCRO® Brand Hook 88
Material	Nylon Yarn	Nylon Yarn
Thickness	0.099"(2.5mm)	0.074" (1.85mm)
Weight	0.015 oz./in <sup>2</sup> (0.026 g/cm <sup>2</sup> )	0.012 oz./in <sup>2</sup> (0.021 g/cm <sup>2</sup> )
Standard Colors	Black and White	Black and White
Engaged Thickness	0.131" <sup>3</sup> (3.3mm)	
Liner	Clear Silicone coated Polyester	Clear Silicone coated Polyester
Adhesive	Acrylic based (72)	Acrylic based (72)





**Typical System Performance**

The following information should be considered typical and is intended to be used as a reference only. This information should not be used for specification purposes. Suitable performance for a specific intended application should be evaluated by the user.

Unless otherwise stated tests were performed under controlled nominal laboratory conditions of 72°F (23C) and 50% relative humidity.

<b>Tensile</b> (Rigid to Rigid Substrates <sup>8</sup> )	
Dynamic Tensile Disengagement <sup>1</sup>	7.5 lbf/in <sup>2</sup> (5.2 N/cm <sup>2</sup> )
<b>Shear</b> (Rigid to Rigid Substrates <sup>8</sup> )	
Dynamic Shear <sup>1</sup>	12 lbf/in <sup>2</sup> (8.3 N/cm <sup>2</sup> )
Static Shear Strength (Test duration= 14400 minutes)	<b>2.0 lbs. (1.4kg)</b>
	<b>Minutes<sup>7</sup></b>
72°F/22C	>14400
140°F/60C	>14400
100°F(38C)//100%RH	>14400
<b>Peel</b>	
	<b>PIW<sup>7</sup></b>
Dynamic Peel Strength 180° <sup>01</sup> (Rigid <sup>8</sup> to Flexible)	4.2
Dynamic Peel Strength "T" <sup>1</sup> (Flexible to Flexible)	1.2
Release Liner Peel Strength <sup>4</sup>	
	0.1 PIW
Closure Cycle Life <sup>5</sup>	
	5000

**Typical Adhesive Performance**

Peel Strength	PIW <sup>6</sup>			
	Aluminum	Stainless Steel	ABS	Polypropylene
Dynamic 15 minute Dwell at 72°F/22C <sup>1</sup>	5.9	4.6	5.4	3.0
Dynamic 24 hours at 72°F/22C <sup>1</sup>	10.8	8.3	6.2	3.2
Dynamic 72 hours at 158°F/70C <sup>1,2</sup>	10.4	10.7	5.1	3.4
<b>Shear Strength</b> (Test duration = 14400 minutes)		<b>Minutes<sup>7</sup></b>		
Static Shear Strength 1.0 lb. 72°F/22C	>14400	>14400	10000	2880
Static Shear Strength 2.0 lb. 72°F/22C	>14400	10000	1440	1440
Static Shear Strength 1.0 lb. 140°F/60C				>14400 <sup>8</sup>
Static Shear Strength 2.0 lb. 100°F(38C)/100%RH				>14400 <sup>8</sup>
Dynamic Shear Strength at 72°F <sup>1</sup>	68 psi /47 N/cm <sup>2</sup>			

<sup>1</sup> Peel rate = 12 in/min

<sup>2</sup> Cooled before test performed

<sup>3</sup> After 10 cycles with an 11lb. roller

<sup>4</sup> Release Liner to Adhesive peel strength

<sup>5</sup> The number of opening and closings before losing 50% of initial closure peel strength

<sup>6</sup> PIW= pounds/inch width

<sup>7</sup> Test duration = 14400 minutes, Sample held on aluminum panel for a minimum of the time and temperature indicated

<sup>8</sup> Aluminum Panel

**Attachment  
Technique**

Adhesive 72 should be applied with even pressure ensuring good contact is made with the substrate. As with all VELCRO® Brand adhesives, the substrate should be cleaned with alcohol and fully dried prior to application of the adhesive.

**Characteristics:**

**Flammability Resistance:** VELCRO® Brand Hook 88/Loop 1000 system is not fire retardant and should not be used where flammability resistance is a concern.

**Water/Humidity resistance:** Nylon hook and loop fasteners will experience a decrease in performance when exposed to water for extended lengths of time. Performance may be regained once the closure dries. Adhesive 72 is not water proof and should not be submerged in water, it will however, withstand incidental exposure to water.

**Outgassing:** Outgassing for space or vacuum applications has not been tested. It is unknown if this product will pass ASTM E595 for outgassing. Please refer to <http://outgassing.nasa.gov/> for a list of products tested at the Goddard Space Flight Center, manufacturer code VEL.

**Sterilization:** These products have not been tested for autoclaving, gas, or steam sterilization.

**Biocompatibility:** VELCRO® Brand Hook 88/Loop 1000 system passes both cytotoxicity and skin irritation testing. 72 adhesive has not been tested for biocompatibility.

**Static Discharge:** VELCRO® Brand Hook 88/Loop 1000 system has not been tested for static discharge after opening and closing the fastener. If static discharge is a concern it should be tested in the end use application.

**Outdoor Use:** Due to the inclusion of nylon in the construction and its known tendency to deteriorate under UV light, VELCRO® Brand Hook 88/Loop 1000 system should be thoroughly tested in this type of application. Adhesive 72 can be used in certain types of outdoor applications, but should be thoroughly tested before use.

**Solvent Resistance:** The nylon material will resist incidental exposure to common solvents but should not be exposed for extended lengths of time. The product should be tested in use for a specific application and has not been tested for resistance to transportation fluids such as gasoline, motor oils, and transmission fluids.

**Washing and Dry Cleaning:** The Hook 88/Loop 1000 system should not be washed or dry cleaned.

**Shelf Life:** Adhesive 72 has a shelf life of 2 years from production date. Keep cool, dry and protect from sunlight.

**Storage**

General storage conditions: 65°F – 75°F (18C - 24C) with relative humidity of 40% – 65%

**Product Use**

The information, statements, and comments contained within this document are based on our experience and testing and are believed to be accurate. However, because there are many factors involved in specific applications that can impact end use and performance, product users should always test the product for its ability to meet the requirements of their specific use and method of application.

**Limited Warranty**

Velcro Industries\* warrant that each product will substantially comply with its written specifications at the time of shipment. ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE EXPRESSLY DISCLAIMED. The product user is responsible for determining whether the product is fit and suitable for intended application. If the product does not meet specifications as warranted, we will, at our option, repair or replace the product, or credit or refund the purchase price. The foregoing constitutes the user's sole remedy and our sole obligation hereunder.

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