



## Estudio Técnico del Sistema Bluebox

### ANEXO “E.2” VELCRO-Brand-Self-engaging Hook-Loop-Tapes.

Agosto 2021

Revisión: Original

Link Conexión Aérea S.A. de C.V.



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**PÁGINA DEJADA INTENCIONALMENTE EN BLANCO**

Agosto 2021

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VELCRO® Brand

# Self-engaging Hook & Loop Tapes











HOOK & LOOP ON OPPOSITE SIDES • HOOK & LOOP ON THE SAME SIDE



# Hook & Loop on Opposite Sides

A WIDE OFFERING OF BACK TO BACK TAPES WHERE HOOK AND LOOP ARE WOVEN, GLUED OR EXTRUDED TOGETHER AND GIVE DIFFERENT PERFORMANCE CHARACTERISTICS FROM HIGH CYCLE LIFE TO DISPOSABLE APPLICATIONS. BOTH HOOK & LOOP COMPONENTS OF THE CLOSURE ARE INTEGRATED IN A SINGLE PRODUCT






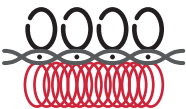
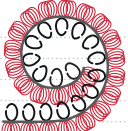
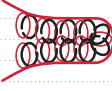


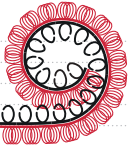



CHARACTERISTICS	FULL WIDTH HOOK COVERAGE				SINGLE HOOK LANE			
								
	Double Face 200	Back to Back (Hook & Loop)	ONE-WRAP® 29	BUNDLE TIE	FLEX-ZONE™ Hook 703	FLEX-ZONE™ Hook 796	FLEX-ZONE™ Hook 797	FLEX-ZONE™ Hook 898
BASE MATERIAL	Polyamide	Polyamide	Hook: Polypropylene Backing: Velour 3800 (polyamide)	Hook: Polypropylene Backing: Nonwoven 3310 (polyester)	Hook: Polypropylene Backing: Velour 3610 (polyamide)	Hook: Polypropylene Backing: Velour 3905 (polyamide)	Hook: Polypropylene Backing: Nonwoven (polyester)	Hook: Polypropylene Backing: Velour 3905 (polyamide)
CONSTRUCTION	Woven Hook & Loop woven together on opposite sides	Glued Woven Hook tape glued onto woven Loop tape	Extruded Plastic Hooks extruded onto back side of Loop material at full width		Extruded Single lane of Hooks extruded onto back side of Loop material			
CYCLE LIFE	Medium	High	Medium	Low	Medium/Low	Medium/Low	Medium/Low	Medium/Low
PEEL STRENGTH (AVERAGE)	2.6 N/cm	2 N/cm	2.1 N/cm	-	1.6 N/cm	0.9 N/cm	1.3 N/cm	1.1 N/cm
SHEAR STRENGTH (AVERAGE)	18 N/cm <sup>2</sup>	10.3 N/cm <sup>2</sup>	27 N/cm <sup>2</sup>	Min. 7 N/cm <sup>2</sup>	27 N/cm <sup>2</sup>	18 N/cm <sup>2</sup>	22 N/cm <sup>2</sup>	20 N/cm <sup>2</sup>
STANDARD COLOURS	Black, white	20 colours	Black, white, yellow, green, blue, red	Moss green	Hook: Black Backing: White	Hook: Black Backing: White, grey	Hook: Natural Backing: White	Hook: Natural Backing: White
STANDARD WIDTHS (mm)	25, 40	16, 20, 23, 25, 30, 38, 46, 50, 100, 125	10, 13, 16, 20, 25, 30, 38, 50, 107	10, 20	Overall: 200 Hook lane: 30	Overall: 200, 300 Hook lane: 15	Overall: 235 Hook lane: 10	Overall: 200 Hook lane: 12
STANDARD PUT-UPS	25 m rolls	25m rolls	25m rolls	25m rolls	50m rolls	51m rolls 91m rolls	60m rolls	75m rolls
EASY PEEL FEATURE	-	-	-	-	Yes	Yes	Yes	Yes
SOME APPLICATIONS	Medical: orthopaedics Transportation: accessories Specialties: bundling	Medical: orthopaedics Specialties: bundling	Materials handling Transportation: cable protection and handling Specialties: bundling, ideal for fibre optics	Specialties: agriculture and plant tie	Materials handling Transportation: cable protection and handling Specialties: bundling			
DISTINCTIVE CHARACTERISTICS	Temperature and chemical resistance Adhesive free, no delamination High softness and flexibility	Flexibility High cycle life	Hook-loop lamination without the use of adhesives Strong self-engaging	Hook-nonwoven lamination without the use of adhesives Disposable self-engaging	Disposable self-engaging			

# Hook & Loop on the Same Side

WOVEN TAPES WHERE HOOK AND LOOP ARE WOVEN SIDE BY SIDE OR MIXED ON THE SAME FACE OF THE TAPE. ITS WOVEN TECHNOLOGY AND HIGH PROFILE SHAPE PROVIDE HIGH PERFORMANCE ON ENGAGEMENT VALUES. BOTH HOOK & LOOP COMPONENTS OF THE CLOSURE ARE INTEGRATED IN ONE PRODUCT

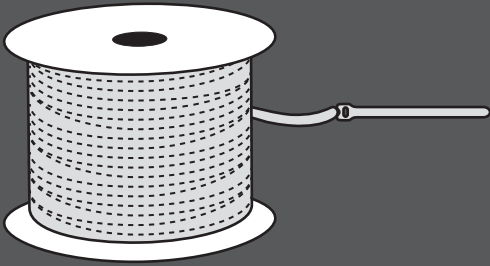


	HOOK & LOOP MIXED	HOOK & LOOP SIDE BY SIDE	
			
CHARACTERISTICS	OMNI-TAPE®	Side by Side Standard	Side by Side PS14
BASE MATERIAL	Polyamide	Polyamide	Polyamide
CONSTRUCTION	Woven Hook & Loop woven together and mixed	Woven Hook & Loop woven side by side with a separation in between	
CYCLE LIFE	High	High	High
PEEL STRENGTH (AVERAGE)	1.22 N/cm	1.2 N/cm	1.2 N/cm
SHEAR STRENGTH (AVERAGE)	8.4 N/cm <sup>2</sup>	13 N/cm <sup>2</sup>	13 N/cm <sup>2</sup>
STANDARD COLOURS	Black, white	Black, white	Black, white
STANDARD WIDTHS (mm)	20, 25, 50	50, 80	50
STANDARD PUT-UPS	25m rolls	25m rolls	25m rolls
SOME APPLICATIONS	<b>Medical:</b> orthopaedics <b>Industrial:</b> high quality apparel, leather jackets	<b>Medical:</b> plasters <b>Specialties:</b> furnishing covers	<b>Specialties:</b> cable guide, upholstery
DISTINCTIVE CHARACTERISTICS	Avoid scratching (loops protecting the hooks)	Closing system with a channel Protection High cycle life	

		TYPES OF CLOSURES	
		HOOK & LOOP ON OPPOSITE SIDES	HOOK & LOOP ON THE SAME SIDE
TECHNOLOGY	WOVEN		 Double face 200  OMNI-TAPE®  Side by Side
	GLUED		 Back to Back (Hook & Loop)
	EXTRUDED		 ONE-WRAP® 29 / BUNDLE TIE  FLEX-ZONE™

VELCRO® Brand  
**ONE-WRAP® Straps**

PATENTED ONE-WRAP® & FLEX-ZONE™ TECHNOLOGIES PROVIDE THE ABILITY TO EXTRUDE HOOKS OR FLAT-ZONES CONTINUOUSLY ON A VARIETY OF LAMINATES AND SUBSTRATES



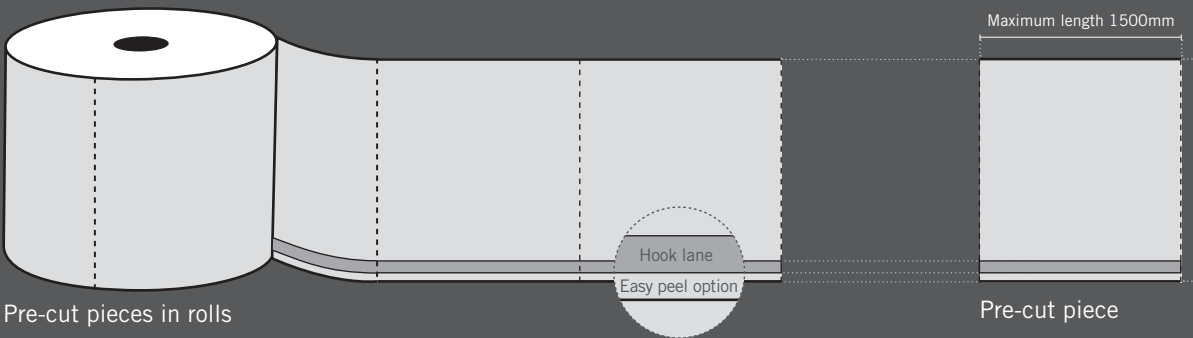
Pre-cut straps in spools

SIZE	STRAPS/SPOOL	STRAP SHAPE
13x200 mm	750	13x200 <span style="float: right;">7 mm</span>
20x150 mm	1.000	20x150 <span style="float: right;">13 mm</span>
20x200 mm	750	20x200 <span style="float: right;">13 mm</span>
20x230 mm	650	20x230 <span style="float: right;">13 mm</span>
20x330 mm	450	20x330 <span style="float: right;">13 mm</span>
25x300 mm	500	25x300 <span style="float: right;">17 mm</span>
10x150 mm	1.200	10x150 <span style="float: right;">10 mm</span>
12x210 mm	700	12x210 <span style="float: right;">12 mm</span>

VELCRO® Brand  
**FLEX-ZONE™ Pieces**



Pre-cut pieces



Pre-cut pieces in rolls

Maximum length 1500mm

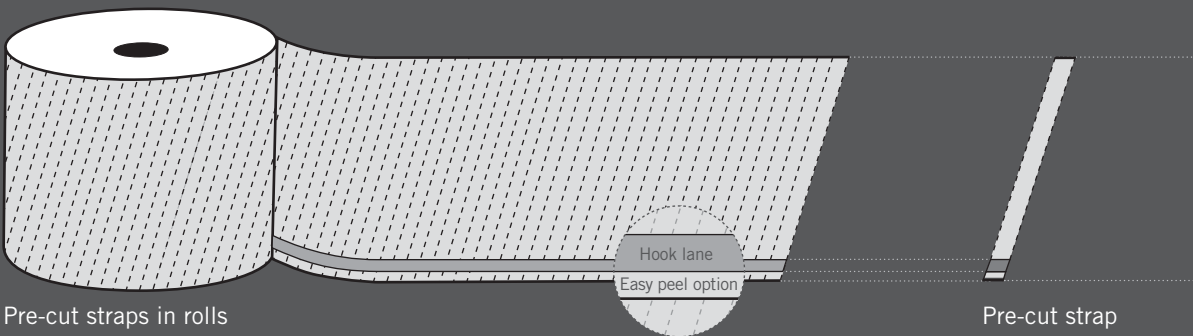
Standard tape widths  
200, 235, 260 and 300mm

Pre-cut piece

VELCRO® Brand  
**FLEX-ZONE™ Straps**



Pre-cut straps



Pre-cut straps in rolls

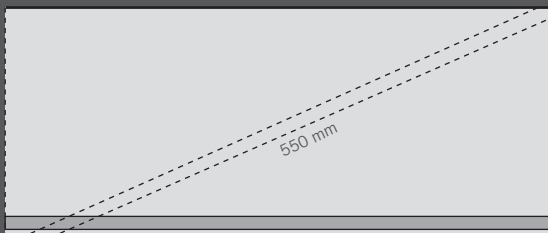
Standard tape widths  
200, 235, 260 and 300mm

Pre-cut strap

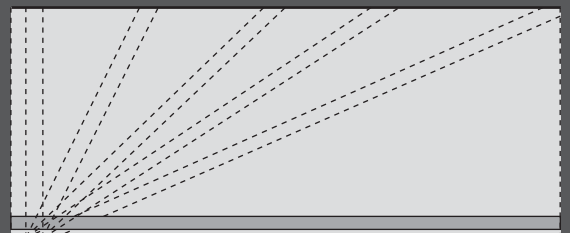
Customised length from 200 to 550 mm



Minimum strap length



Maximum strap length



Some strap length options

## METHODS OF ATTACHMENT



**Pressure sensitive adhesives**  
(See VELCRO® Brand Adhesives Range)



**Sewing**



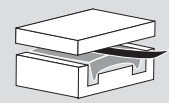
**Mechanical**



**Heat or solvent activated adhesives**  
(See VELCRO® Brand Adhesives Range)



**Welding**



**Mold-in**

## FABRICATION



**Slitting**



**Scored cut**



**Custom manufactured straps**



**Pre-cut**



**Mated**



**Complete product assembly**

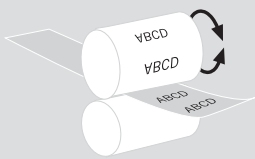


**Die cut**

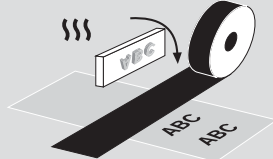


**Perforated**

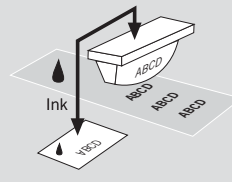
## PRINTING



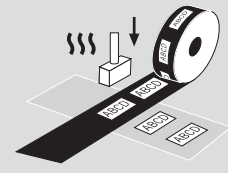
**Flexography**



**Hot stamping**



**Pad printing**



**Heat transfer labels**

## PACKAGING



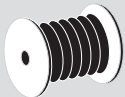
**Rolls**



**Sealed bag**



**Bundling**



**Spools**



**Blister**



**Bulk**



**Shipping boxes**



**Folding boxes**



**Customised packaging**



**Labels**

## APPLICATIONS



**APPAREL**



**CONSTRUCTION**



**MEDICAL**



**MILITARY & GOVERNMENT**



**PACKAGING & MATERIALS HANDLING**



**PERSONAL CARE**



**TRANSPORTATION**



**OTHER INDUSTRIES**



VELCRO INDUSTRIES ARE WORLDWIDE LEADERS IN FASTENING SYSTEMS OFFERING A WIDE RANGE OF SOLUTIONS, FROM STANDARD HOOK AND LOOP TO COMPLETE FINISHED PRODUCTS.

**50 YEARS OF EXPERIENCE:** WE ARE PROUD OF OUR HERITAGE IN INNOVATION HAVING OVER 300 ACTIVE PATENTS TO OFFER BETTER SOLUTIONS TO SATISFY OUR CUSTOMERS' NEEDS.



**USA**

Velcro USA Inc.  
Tel: (+800) 225 0180  
marketing@velcro.com  
www.velcro.com

**Canada**

Velcro Canada Inc.  
Tel: (+800) 683 5276  
canada@velcro.com  
www.velcro.ca

**Mexico**

Velcro de Mexico, S.A. de C.V.  
Tel: (+52) 55 5005 3300  
salesmc@velcro.com  
www.velcrodemexico.com

**Spain**

Velcro Europe S.A.  
Tel: (+34) 93 758 32 98  
infovelcro@velcro.es  
www.velcro.es

**Germany**

Velcro GmbH  
Tel: (+49) 7141 991 19-0  
info@velcro.de  
www.velcro.de

**France**

Velcro Industries France S.A.S.  
Tel: (+33) 0 1 34 38 78 88  
info@velcro.fr  
www.velcro.fr

**Italy**

Velcro Italia, S.R.L.  
Tel: (+39) 039 62 70 01  
commerciale@velcro.com  
www.velcro.it

**UK**

Velcro Limited  
Tel: (+44) 1606 73 88 06  
uksales@velcro.com  
www.velcro.co.uk

**Australia**

Velcro Australia Pty. Ltd.  
Tel: (+61) 3 9703 2466  
sales@velcro.com.au  
www.velcro.com.au

**China**

Velcro China Fastening Systems Company Limited  
Tel: (+86) 21 6045 2090  
(Shanghai Sales Office)  
www.velcro.com.cn

**Hong Kong**

Velcro Hong Kong Ltd.  
Tel: (+852) 2570 3698

**VELCRO INDUSTRIES AROUND THE WORLD**



- Sales offices
- Manufacturing facilities
- Research & Development centres