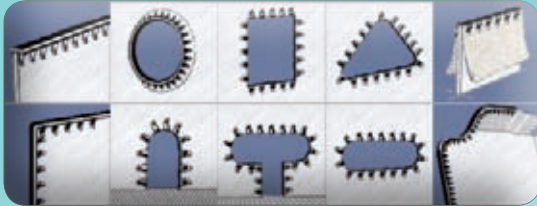


SpringFast®

Wire Protection Grommet Edging and Trim



Spring-Fast



Spring-Fast SL Series



Spring-Fast Mil-Spec



Trim-Fast™ S Series



SpringFast®

Wire Protection Grommet Edging

Spring-Fast is the fastest, safest, most reliable way to protect wires, cables, and tubing from abrasion. It locks on with finger pressure in seconds, eliminating solvents, adhesives, ancillary materials and volatile organic compound (VOCs). Spring-Fast installs continuously and is very flexible for use on sharp corners and curved edges, such as flanged holes.



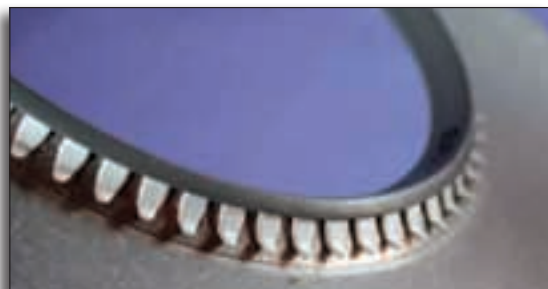
AP and BAP Series



BT Series



FM Series



BAP Series White

Features for all Spring-Fast:

- Coated with abrasion resistant nylon thermoplastic
- UL94 V-0 flammability rating
- RoHS and FAR 25.853 compliant
- Eliminates adhesives and ancillary
- UV Resistant
- For use on a wide range of panel thicknesses

Spring-Fast "T" Series:

- Lowest profile (size) grommet
- Operating temperature range: -40°F to 285°F (-40°C to 140°C)
- For straight edges and sharp inside and outside corners

Spring-Fast "BT" Series:

- Includes a flexible polymer cushion for added abrasion protection
- Operating temperature range: -40°F to 185°F (-40°C to 85°C)
- For straight edges and sharp inside and outside corners

Spring-Fast "AP" Series:

- Greater gripping strength for severe shock and vibration environments
- Operating temperature range: -40°F to 285°F (-40°C to 140°C)
- Multi-axis flexibility for straight edges, rounded inside and outside corners, and flanged holes

Spring-Fast "BAP" Series:

- Greater gripping strength for severe shock and vibration environments
- Includes a flexible polymer cushion for added abrasion protection
- Operating temperature range: -40°F to 185°F (-40°C to 85°C)
- Multi-axis flexibility for straight edges, rounded inside and outside corners, and flanged holes
- Optional white coating with gray cushion for aerospace applications

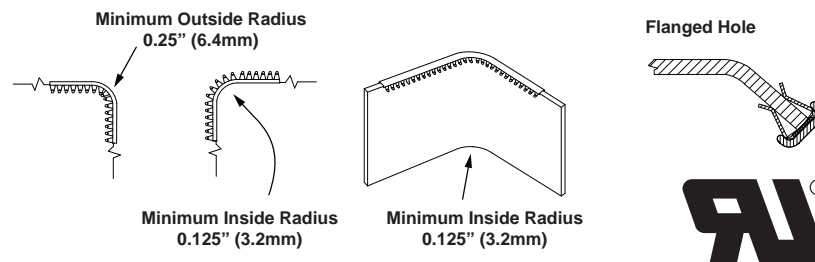
Spring-Fast "FM" Series:

- Same characteristics as "AP" Series plus flush mounting on one side for flat panel surfaces
- Operating temperature range: -40°F to 285°F (-40°C to 140°C)
- Multi-axis flexibility for rounded inside and outside corners

Spring-Fast "SLC" Series:

- Completely encapsulated in a flexible UL94 V-0 flame retardant polymer
- Operating temperature range: -40°F to 185°F (-40°C to 85°C)
- Added abrasion protection for wires and hands

Multi-Axis Flexibility:



Qualifications:

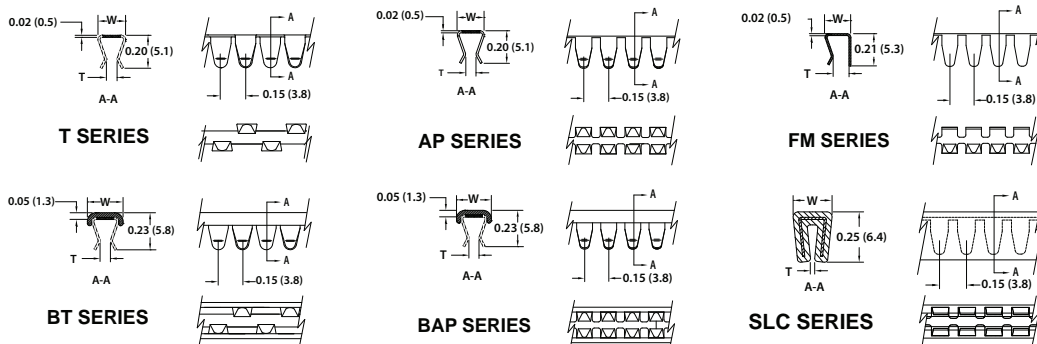
Spring-Fast Product Configurations	T	AP	FM	BT	BAP	SLC*
Axis Conformity	Single	Multi	Multi	Single	Multi	Multi
Vicat Softening Point per ASTM D01525 Rate B	Substrate Finish: ISO306 356°F (180°C)			TPE Cushion: ISO306 230°F (110°C)		
Operating Temperature Range	-40°F to 285°F (-40°C to 140°C)			-40°F to 185°F (-40°C to 85°C)		
Dielectric Strength Volts 60Hz NASM22529 Section 3.2.1	1000			1500		
Substrate	Stainless Steel					Steel
Taber Abrasion Resistance	Nylon per NFT 30-015 5mg to 8mg loss, 100 cycles			TPE Cushion per D1044 1 KG load C17 Wheel 25mg loss, 1000 cycles		
Finish (End Code)	Epoxy Blue (03) Epoxy Green (06) Nylon Black (02) Epoxy White (07) FDA White (04)		TPE Cushion Black (01) Gray (02)			
Salt Spray Hours	2000					
Immersion	Per NASM22529 and Skydol Compatible					-
Random Shock and Vibration	MIL-STD-1344, Method 2005.1 Test Condition V1, Letter J Duration 8 hours longitudinal and 8 hours perpendicular. rms G 41.7					
Flammability	UL94 V-0 File No. E113553 NZMT2 • MIL-STD-202F, Method 111A • FAR 25.853 • Telcordia GR-63-CORE					UL94 V-0
Fabrication Options	Factory pre-cut lengths • Bulk or private branded kits Roll-Fast™ installation tool • Bench mounted cut-off press					

Sizes:

* SLC Coming Soon

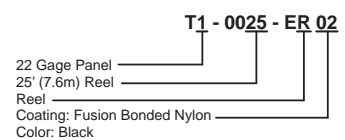
Product Size	Panel Thickness		Product Color Code	Width Inches (mm)					
	Inches (mm)	Gauge		AP/FM	AP	T	FM	BT	BAP
0	0.020 - 0.030 (0.5 - 0.8)	24, 23, 22, 21	Lt. Purple	0.13 (3.3)	N/A	N/A	0.19 (4.8)		
1	0.029 - 0.045 (0.7 - 1.1)	20, 19, 18	White			N/A			
2	0.044 - 0.056 (1.1 - 1.4)	17, 16	Pink			N/A			
3	0.055 - 0.069 (1.4 - 1.7)	15, 14	Yellow	0.18 (4.6)	N/A	0.14 (3.6)	0.23 (5.8) 0.28 (6.8) 0.23 (5.8)		
4	0.069 - 0.090 (1.7 - 2.3)	13, 12	Blue			N/A			
5	0.089 - 0.114 (2.3 - 2.9)	11, 10, 9	Green			N/A			
6	0.113 - 0.130 (2.9 - 3.3)	8	Orange	N/A	0.25 (6.4)	N/A	0.32 (8.1)	N/A	N/A
7	0.180 - 0.204 (4.6 - 5.2)	5, 4	N/A						
8	0.240 - 0.260 (6.1 - 6.6)	2	N/A	N/A	0.32 (8.1)	N/A	0.38 (9.6)	N/A	N/A

Spring-Fast Profiles:

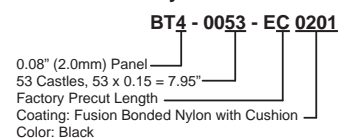


Ordering Examples:

T Series on Reel



BT Series Factory Precut



Mil Spec qualified Spring-Fast is the fastest, safest, most reliable way to protect wires, cables, and tubing from abrasion. It locks on with finger pressure in seconds, eliminating solvents, adhesives, ancillary materials and volatile organic compound (VOCs). Installs continuously and is very flexible for use on straight edges and sharp inside and outside corners.



M22529/1



M22529/2



Features and Benefits:

- NASM22529 qualified
- FAA approved
- Eliminates adhesives
- Eliminates major environmental and safety concerns
- Adapts to a wide range of material thicknesses and applications
- For straight edges and inside and outside corners
- FAR 25.601, FAR 25.853, Cage Code: 0HES0
- UL94 V-0 compliant
- RoHS compliant
- National stock numbers available
- Mil Spec Cage Code 0HES0

Applications:

- Airframe Structure
- Military Tactical Vehicles
- Auxiliary Power Units
- Avionic Instruments
- In-flight Entertainment
- Bulkheads
- Seating
- Dashboard
- Lightening Holes
- Tail Section
- Radar Systems
- Flight Refueling
- Land and Armaments
- Wing Ribs

Qualifications:

	M22529/1	M22529/2
Temperature Range	-40°F to 285°F (-40°C to 140°C)	-40°F to 185°F (-40°C to 85°C)
Voltage Breakdown 60 Hz	1500 V	
Flammability	FAR 25.601, FAR 25.853 MIL-STD-202F Method 111A	
Random Shock and Vibration	MIL-STD-1344 Method 2005.1 Test Condition VI, Letter J Overall rms G 41.7	
Salt Spray Testing	2000 hours minimum MIL-STD-202F Method 101D	



Part Numbers

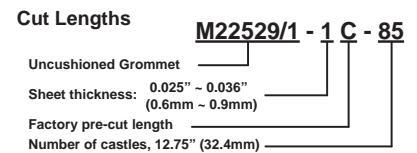
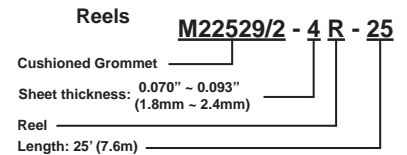
Military Standard		MIL-STD Cross Reference	Sheet Thickness A		Unit Length L		Width B		DTi Cage Code 0HES0 Part Number				
Part Number	Dash Variation		Inches	mm	foot	m	Inches	mm					
M22529/1	-1R-25	MS21266-1 0.015"-0.052"	0.025	0.60	25	7.6	0.14	3.56	T1-0025	-ER0602			
	-1R-100		0.036	0.90	100	30.5			T1-0100				
	-2R-25	MS21266-2 0.052"-0.085"	0.036	0.90	25	7.6			T2-0025				
	-2R-100		0.063	1.60	100	30.5			T2-0100				
	-3R-25	MS21266-3 0.085"-0.128"	0.059	1.50	25	7.6			T3-0025				
	-3R-100		0.074	1.90	100	30.5			T3-0100				
	-4R-25	MS21266-4 0.128"-0.192"	0.070	1.80	25	7.6	0.19	4.83	T4-0025				
	-4R-100		0.093	2.40	100	30.5			T4-0100				
	-5R-25	MS21266-5 0.192"-0.255"	0.090	2.30	25	7.6			T5-0025				
	-5R-100		0.111	2.80	100	30.5			T5-0100				
	-6R-25	MS21266-6 0.255"-0.318"	0.105	2.70	25	7.6			T6-0025				
	-6R-100		0.134	3.40	100	30.5			T6-0100				
	-7R-25	MS21266-7 0.318"-0.381"	0.178	4.50	25	7.6	0.25	6.35	T7-0025				
	-7R-100		0.198	5.00	100	30.5			T7-0100				
	-8R-25	MS21266-8 0.381"-0.444"	0.240	6.10	25	7.6			T8-0025				
	-8R-100		0.260	6.60	100	30.5			T8-0100				
	-nC-85	-	-	-	12.75"	324mm			-		-	Tn-0085	-EC0602
	M22529/2	-1R-25	MS21266-1 0.015"-0.052"	0.025	0.60	25			7.6		0.20	5.10	BT1-0025
-1R-100		0.036		0.90	100	30.5	BT1-0100						
-2R-25		MS21266-2 0.052"-0.085"	0.036	0.90	25	7.6	BT2-0025						
-2R-100			0.063	1.60	100	30.5	BT2-0100						
-3R-25		MS21266-3 0.085"-0.128"	0.059	1.50	25	7.6	BT3-0025						
-3R-100			0.074	1.90	100	30.5	BT3-0100						
-4R-25		MS21266-4 0.128"-0.192"	0.070	1.80	25	7.6	0.24	6.10	BT4-0025				
-4R-100			0.093	2.40	100	30.5			BT4-0100				
-5R-25		MS21266-5 0.192"-0.255"	0.090	2.30	25	7.6			BT5-0025				
-5R-100			0.111	2.80	100	30.5			BT5-0100				
-6R-25		MS21266-6 0.255"-0.318"	0.105	2.70	25	7.6			BT6-0025				
-6R-100			0.134	3.40	100	30.5			BT6-0100				
-7R-25		MS21266-7 0.318"-0.381"	0.178	4.50	25	7.6	0.32	8.10	BT7-0025				
-7R-100			0.198	5.00	100	30.5			BT7-0100				
-8R-25		MS21266-8 0.381"-0.444"	0.240	6.10	25	7.6			BT8-0025				
-8R-100			0.260	6.60	100	30.5			BT8-0100				
-nC-85		-	-	-	12.75"	324mm			-	-	BTn-0085	-EC0602	
MFE-100													#330

Cut Lengths

Nominal Hole Diameter Reference	Cut Lengths	
	L Length	Number of Castles
2.000	6.00	40
2.250	6.90	46
2.500	7.65	51
2.750	8.40	56
3.000	9.15	61
3.250	10.05	67
3.500	10.80	72
3.750	11.55	77
4.000	12.30	82
4.250	13.20	88
4.500	13.95	93
4.750	14.70	98
5.000	15.45	103
5.250	16.35	109
5.500	17.10	114
5.750	17.85	119
6.000	18.60	124

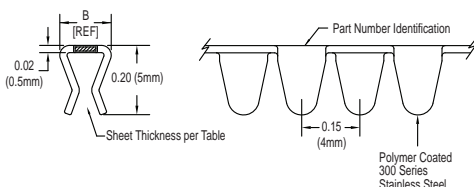
Dimensions in inches per NASM22529

Ordering Examples

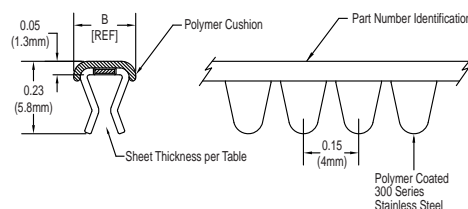


Due to sheet thickness tolerances and finishes, end user should determine product sizes by trial. When sheet thickness is at the maximum for the grommet chosen, end user may use a rubber mallet to set, or try the next size larger grommet.

M22529/1 Grommet



M22529/2 Grommet



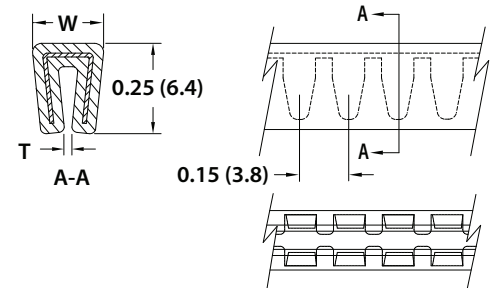
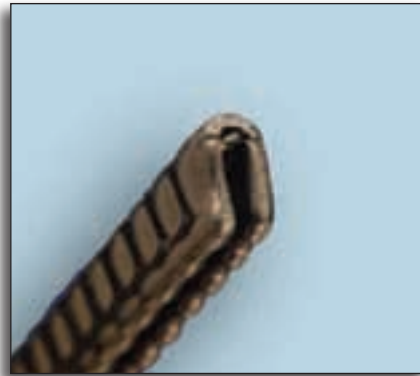
Ordering Options:

- 25' (7.6m) or 100' (152m)
- Factory pre-cut lengths
- Bulk or private branded kits
- 840R Roll-Fast™ installation tool
- MFE-100 Full Bypass Shears
- 860GSB Spring-Fast® Cut to Length Scale

SpringFast® SL AERO Series

Wire Protection Grommet Edging

Spring-Fast SL AERO Series is the fastest, safest, most reliable way to protect wires, cables, and tubing from abrasion. It locks on with finger pressure in seconds, eliminating solvents, adhesives, ancillary materials, and volatile organic compound (VOCs). SL AERO is encapsulated in flexible polymer for added abrasion protection for high performance applications.



Features and Benefits:

- Multi axis flexibility for flanged holes, inside and outside corners
- Continuous edge protection with excellent gripping strength
- Excellent resistance to abrasion and water absorption
- Fast assembly without the use of adhesives, or fasteners
- RoHS and DFARS compliant

Applications:

- Aerospace
- Military
- Automotive
- Industrial
- Medical
- Railway

Product Size	Sheet Thickness "T"		Width "W"	
	Inches	(mm)	Inches	(mm)
0	0.020 - 0.030	(0.5 - 0.8)	0.19	(4.8)
1	0.029 - 0.045	(0.7 - 1.1)		
2	0.044 - 0.056	(1.1 - 1.4)		
3	0.055 - 0.069	(1.4 - 1.7)	0.23	(5.8)
4	0.069 - 0.090	(1.7 - 2.3)		
5	0.089 - 0.114	(2.3 - 2.9)		
6	0.113 - 0.130	(2.9 - 3.3)		
6MA	0.135 - 0.145	(3.4 - 3.7)		

Description	Specification	Test Standard
Substrate	Stainless Steel	ASTM A 666-03
Vicat Softening Point	ISO306 230°F (110°C)	ASTM D01525 Rate B
Operating Temperature Range	-67°F to 203°F (-55°C to 95°C)	MIL-STD-202G, Method 107G, Table 107-1
Low Temperature Soak	-40°F (-40°C)	MIL-STD-810E, Method 502.3
Temperature Cycling	-67°F to 203°F (-55°C to 95°C)	MIL-STD-202G, Method 107G, Table 107-1
Humidity	No physical change	MIL-STD-810F, Method 507.4 & Figure 507.4-1
Dielectric Withstanding Voltage	2000 volts @ 60Hz	NASM22529 Paragraph 4.2.9
Abrasion Resistance	25 mg Loss	ASTM D1044 1Kg Load, C17 Wheel @ 1000 cycles
	No change in weight or dielectric strength	DTi Abrasion Resistance Test 250,000 cycles @ 60 cycles/min.
Salt Spray Hours	3000	ASTM B117. MIL-STD-202, Method 301
Immersion	No physical change	NASM22529 and Skydrol Compatible
Mechanical Shock	No movement or physical change	MIL-STD-810C Method 516.2 Test Procedure IV Drop Test @ 100 g force per 3 perpendicular axes
Random Vibration	No movement or physical change	MIL-STD-202 Method 214A Table, Duration: 8 hours in 3 perpendicular axes over GRMS 39
Flammability	No sustained flame front or drips on test floor	ASTM E 162, FAR 25, UL94 V-0
Smoke Density	Test period 90 sec., 4 min., 20 min. with no flaming, dripping, or running	ASTM E 662, FAR 25
Flammability Certifications	FAR 25.853	UL94 V-0 (File No. E113553 NZMT2)

HIGH HEAT Series SpringFast® Wire Protection Grommet Edging

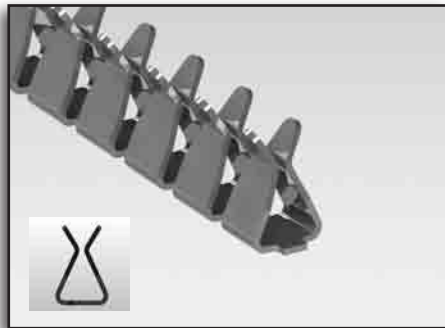
Spring-Fast HIGH HEAT is made from our uncoated Spring Fast material and can withstand up to 1000°F (537°C) for use in high temperature areas where critical edge protection is necessary.

Features & Benefits

- Snap on multi-axial mounting, no adhesive necessary
- Available on 25' or 100' foot reels or pre-cut lengths
- Lowest profile on the market
- Operating temperature up to 800°F (427°C)
- UL94 V-0 • RoHS compliant • FAR 25.853

Applications

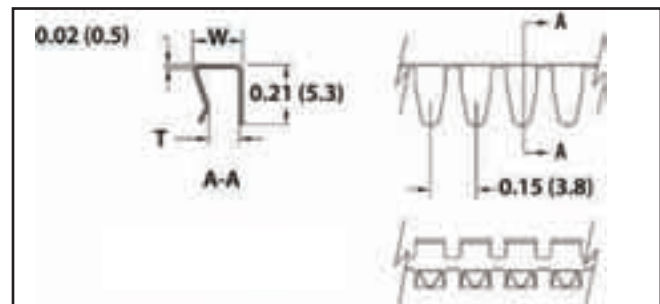
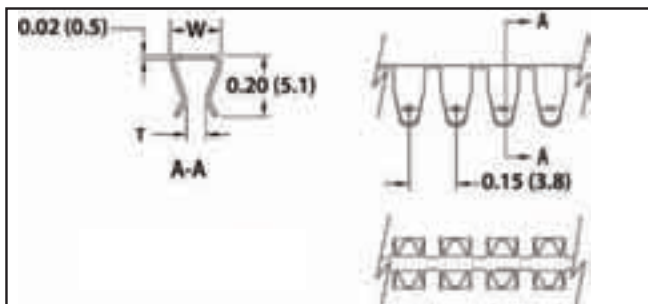
- Heatshields
- Exhaust Systems
- Engine Compartments
- Gas and Oil Steam Boilers
- Ovens



“AP” Series



“FM” Series

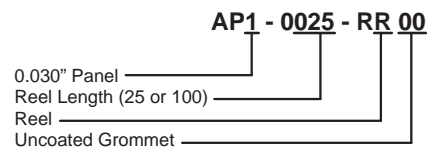


Specifications

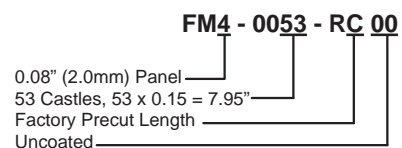
Product Size	Sheet Thickness (T) (Inches)	Width (W)	
		AP	FM
0	0.020-0.030	0.13	N/A
1	0.029-0.045		0.14
2	0.044-0.056		
3	0.055-0.069	0.18	0.14
4	0.068-0.090		N/A
5	0.089-0.114		
6	0.113-1.130		

Ordering Examples

AP Series on Reel



FM Series Factory Precut



*Precut lengths in increments of 0.15"