

Self-Supporting MaxCell®: Inside Plant Solution



Technical Manual
& Installation Guide

Self-Supporting MaxCell®: Inside Plant Solution



Self-Supporting MaxCell is a flexible fabric pathway system designed specifically for transporting cables efficiently in data centers, drop ceilings, and areas that require adaptable reconfigurations. The integrated support structure and multiple pathways reduce the steps required to place cables, minimizing the time require for cable installation.

Key Features

- Fire Retardant MaxCell
- Configured with 3 cells to support network flexibility and growth
- Pre-installed galvanized support wire – strong and flexible
- Pre-installed color-coded pulling tapes to speed cable installation
- Works with support systems from an extensive group of manufacturers

Part Number	# Pathways	Product Width	Maximum Aggregate Cable Diameter	Static Load F
MXP43SS	3	3.5"	1.75"	20lb

Benefits

- Install MaxCell the same as a standard wire install.
- Install bundles of 24 CAT 6 cables without Velcro™ or Cable ties.
- Up to 72+ Cables in one MaxCell pack.
- Reduce cable install by up to 30% compared to cable tray.
- Reduce cable damage and installation re-work.

Self-Supporting MaxCell®: Materials of Construction

Self-Supporting MaxCell is constructed of the same fire retardant components used in our Plenum-Rated products.

Component	Material
Fire Resistant Fabric	<ul style="list-style-type: none">• Fire Resistant Nylon Monofilament• Low Smoke / Zero Halogen
Support Cable	<ul style="list-style-type: none">• Galvanized 7x7 Stranded Steel• 3/32" diameter• Load Rating: 920lbs• Weight: 1.6lbs per 100ft.
Pull Tape	<ul style="list-style-type: none">• High Tenacity Polyester• 1250lb rating
Operating Range	<ul style="list-style-type: none">• 22 to 212° F
Length Tolerance	<ul style="list-style-type: none">• -0 to +0.5%

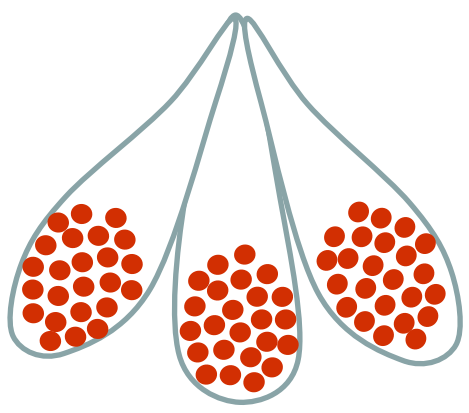
Note: all specifications are subject to change without prior notice



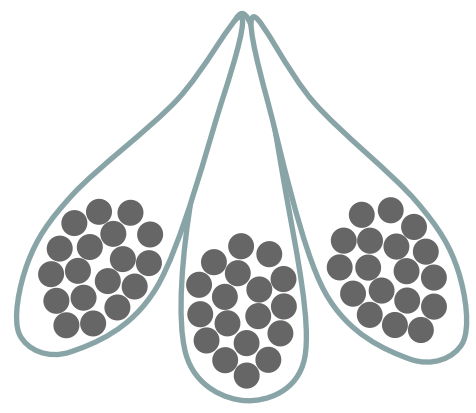
Fifty-Four (54) CAT 6A cables exiting Self-Supporting MaxCell

Self-Supporting MaxCell®: Maximum Cable Capacity by Type*

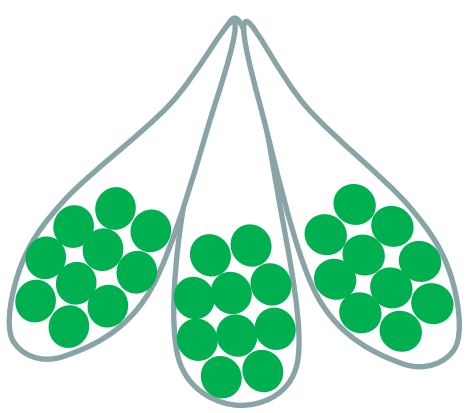
CAT 6
72 Cables



CAT 6A
54 Cables



CAT 5
30 Cables



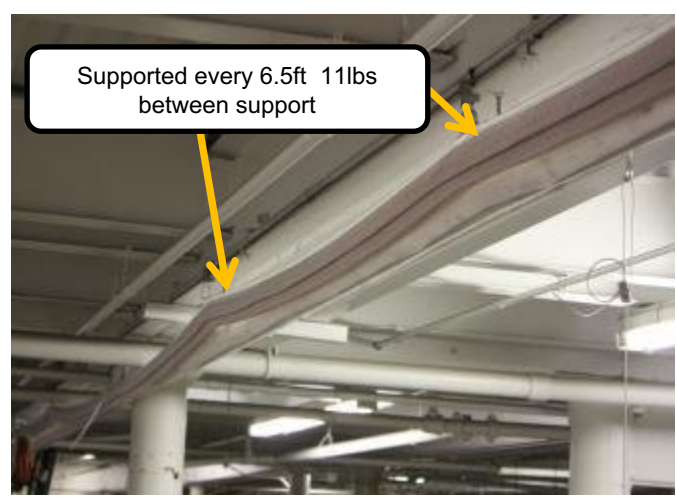
*Recommended guideline only – cable diameters and jacket type vary depending on manufacturer

Self-Supporting MaxCell®: Recommended Span Length

Self-Supporting MaxCell Cable Sag vs. Span Distance (inches)

Cable Weight (Lbs)	Span Distance (Feet)				
	5	10	15	20	25
5	<1	1	1.5	2	2
10	1	1.5	2	2.5	3
20		2	3	4	5
30			6	7	8
40				9	
50					13

- Recommend not to exceed 20lbs in cable weight per span distance greater than 15 feet.



Self-Supporting MaxCell®: Grounding / Bonding

Self-Supporting MaxCell shall be bonded and/or grounded in complete compliance with the requirements of the authority having jurisdiction (AHJ). All requirements with regard to bonding and grounding (earthing) of Federal, State, and local codes shall be complied with in total, and in accordance with Article 800 and Article 250 of the National Electrical Code (NEC).



For grounding to beams connect the self supporting cable to a #12 or 14 AWG Copper wire using a standard copper lug split bolt connector sized for the wire.

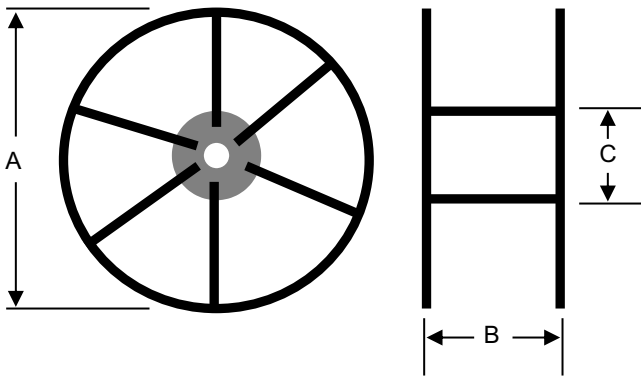


Connect the wire to a beam clamp grounding connector. The example shown uses an Electric Motion Company "Connector C with Teeth" Part No. EMO167BV

Self-Supporting MaxCell®: Packaging

Package Type	Material of Construction		Exact Dimensions			Empty Reel Wt.	Maximum Reel Capacity
	Flange	Core	Height A	Width B	Core C		
Plastic Reel	Plastic	Plastic	22"	19"	6"	4 lbs	500ft.
Wood Reel	1/2" Plywood	Fiberboard	33"	15"	8"	24 lbs	1000ft.
33"x22" Wood Reel	3/4" Plywood	Fiberboard	33"	22"	8"	26 lbs	1500ft.

All dimensions are approximate, are intended to be used as reference purposes and are subject to change.



Prior to shipping all reels:

- Are wrapped with a UV protective film

Self-Supporting MaxCell®: Physical Properties

Physical Property	Standard Value	Test Method
Cell Diameter (inch)	1.8"	
Breaking Tensile (lbs)	>2300	ASTM D2256
Elongation @ 100lbs	<5.0%	ASTM D2256
Bending Test	Pass	Bellcore 356 4.2.5
Environmental Stress Cracking	Pass	ASTM D1693
Hydrocarbon Resistance	<7.5% Tensile	Bellcore 356 4.3.2
Print Durability	Pass	Bellcore 356 5.3.5
Melting Point	>420° F	ASTM D3418
Fungi Resistance	Pass	ASTM G21
Halogen Content	Halogen Free	MIL PRF 85045 F
Smoke Toxicity Index	Pass	NES 713
Optical Smoke Density	Pass	ASTM E662
Oxygen Index	22 to 24	ASTM D2863

Note: all specifications are subject to change without prior notice

Self-Supporting MaxCell®: Technical Questions

Question: Can I pull Self-Supporting MaxCell through bends?

Answer: Self-Supporting MaxCell is designed for maximum efficiency in straight sections. It is recommended that a new section be placed where a 90° bend is required.



Question: Is Self-Supporting MaxCell plenum rated?

Answer: Self-Supporting is currently in UL certification in US and Canada and is made from the same components as our Plenum rated products

Question: Can you mix cables in different cells?

Answer: Yes. Cables can be mixed but the installer must verify whether cables can be placed in proximity to each other. The individual pathways of MaxCell will keep the cable bundles from coming into contact with each other.

Question: Will Self-Supporting MaxCell reduce crosstalk interference between cables?

Answer: Self-Supporting MaxCell is a flexible fabric that contains no shielding. The product will not prevent or reduce crosstalk.

Self-Supporting MaxCell®: Technical Questions

Question: Can Self-Supporting be tie-wrapped to finish the installation?

Answer: Tie-wraps are an acceptable practice of attaching the product to existing structure but the tie wrap must be placed in between the seam and the messenger cable. Cut a small slit for the tie wrap. Under no condition should the tie wrap completely encase the whole assembly. Doing this will not allow future cables to be deployed.



Correct Support

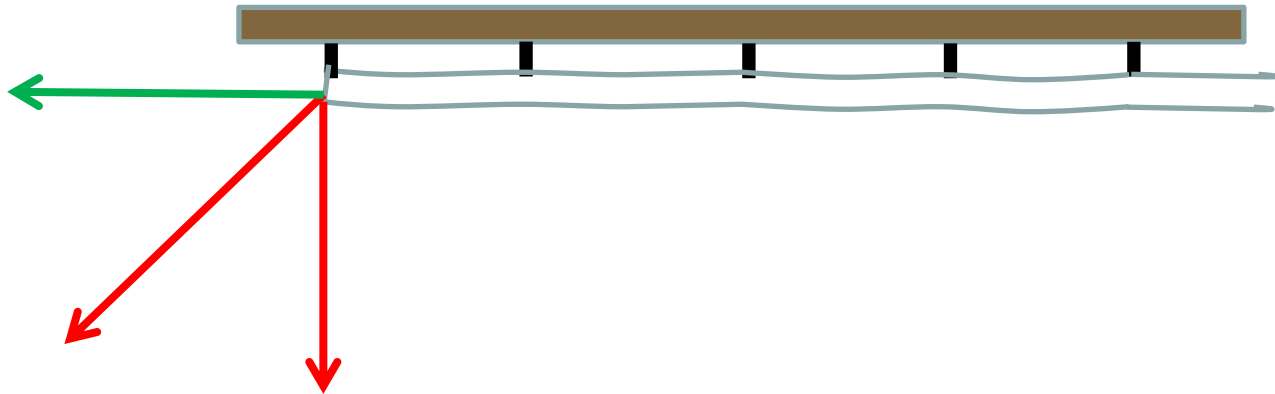


Incorrect Support

Self-Supporting MaxCell®: Technical Questions

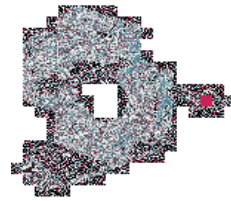
Question: How should I pull the cables through Self Supporting MaxCell?
Answer: The cables should be pulled horizontally from the leading end of the run starting with the middle cell and moving to the two outer cells. Self-Supporting MaxCell is designed to withstand appropriate direct downward force.

If there is an application where cables cannot be placed in a relatively horizontal direction, then it is recommended to use an assist tool such as the “Cable Joe”, “Fas Roller” or pulley and eyebolt system.



Cable Joe

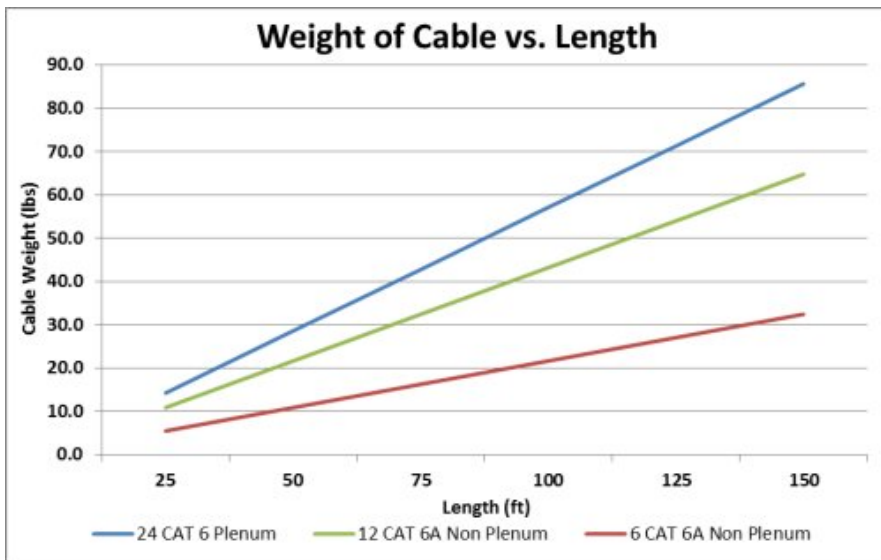
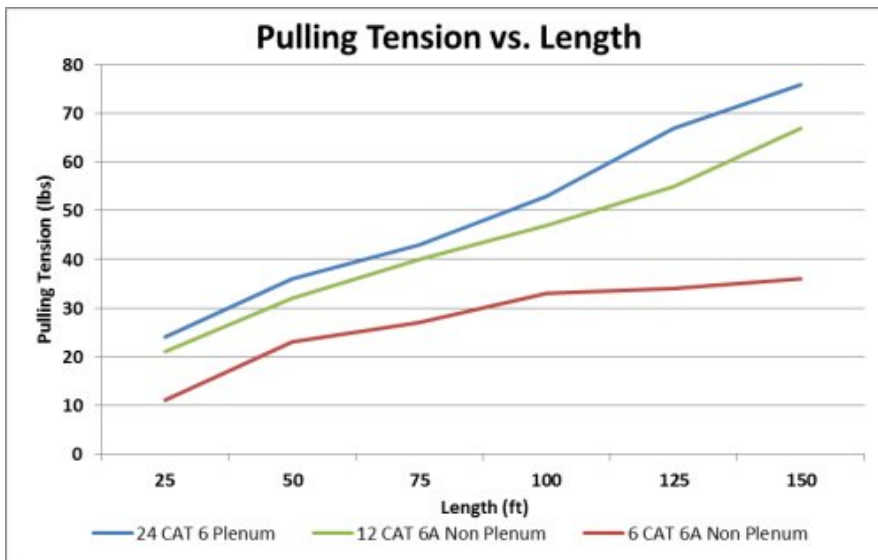
Fas Roller



Self-Supporting MaxCell®: Technical Questions

Question: How easy is it to pull cables into Self-Supporting MaxCell?

Answer: There are many variables that effect the pulling tension of cables (e.g. bundle diameter, jacket material, weight., etc.). A good rule of thumb is that the pulling tension will rise proportional to the total weight of the cables being pulled.



Installation Instructions

Self-Supporting MaxCell®: Installation Tools & Materials



- A. 5/16" Hook and Eye Turnbuckle
- B. Beam to conduit purlin clamp
- C. Adjustable wrench or 5/16" and 3/8" wrench
- D. Wire clamp
- E. Cable cutters
- F. 3/8" Beam clamp
- G. 3/8" Eye Bolt
- H. Box cutter or scissors

Self-Supporting MaxCell®: Installation Steps

Step 1: Attach beam clamp (F) to beam using adjustable wrench



Step 2: Screw eye bolt (G) into beam clamp (F)



Self-Supporting MaxCell®: Installation Steps

Step 3: Trim 12" of Self Supporting MaxCell leaving cable and tapes

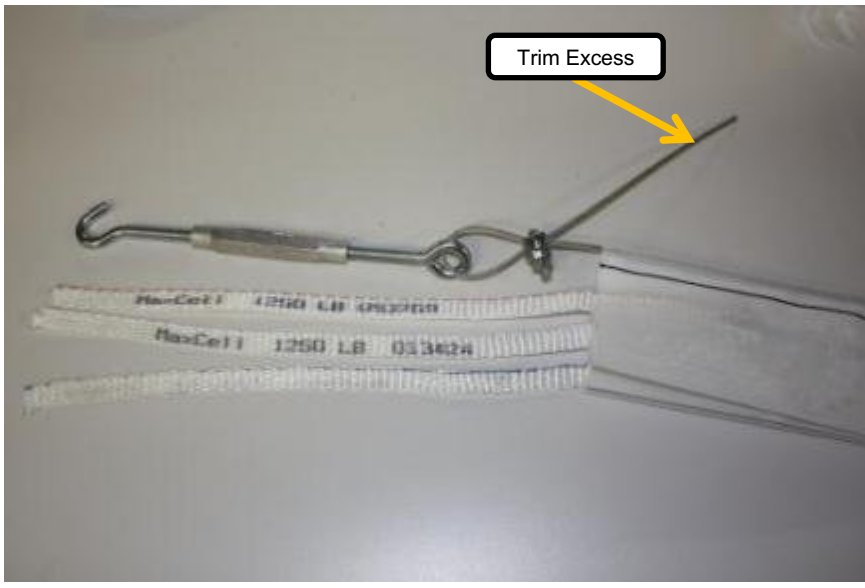


Step 4: Thread wire clamp (D) and turnbuckle (A) onto cable

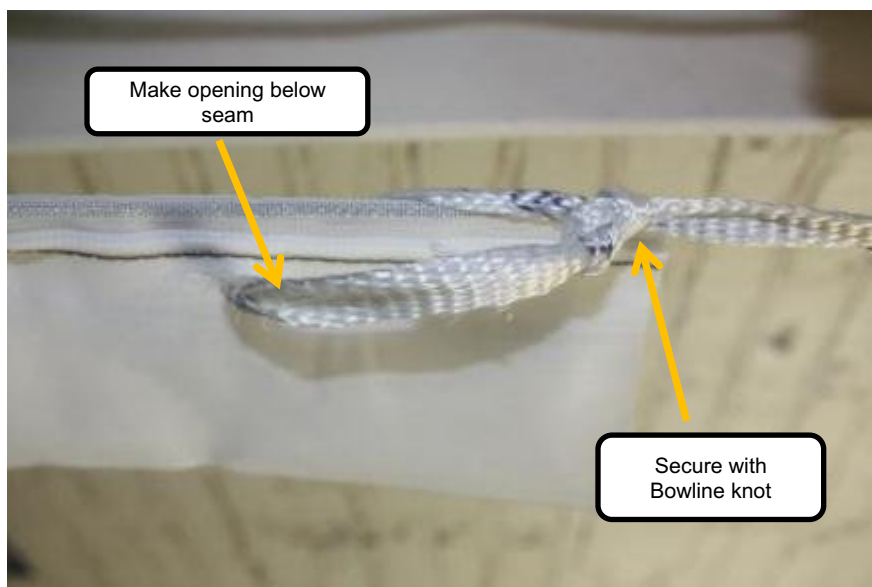


Self-Supporting MaxCell®: Installation Steps

Step 5: Loop cable back through wire clamp (D) and tighten

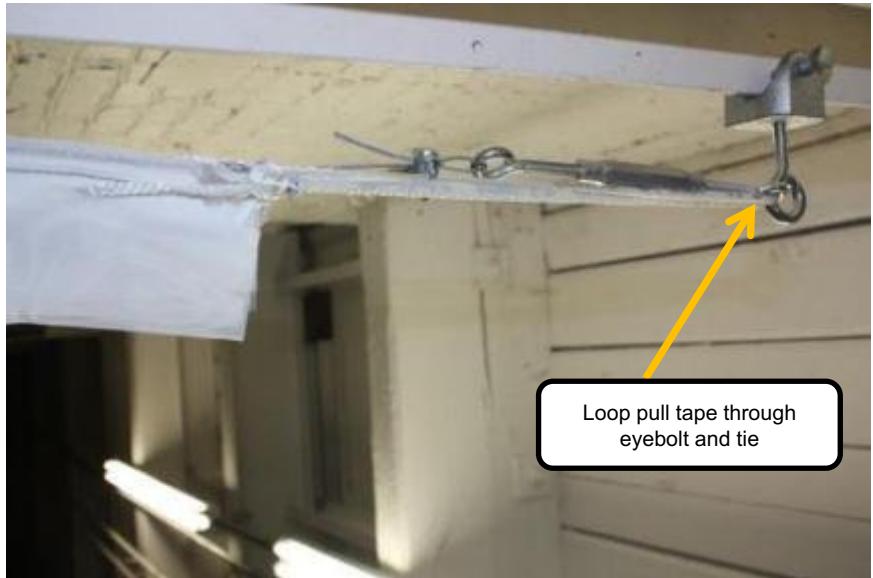


Step 6: Cut slit 3" from end and attach a short piece of pull tape to the MaxCell



Self-Supporting MaxCell®: Installation Steps

Step 7: Hook turnbuckle (A) through eyebolt/beam assembly and tension cable



Step 8: On opposite end secure cable with wire clamp. Repeat step to secure the Self-Supporting MaxCell with pull tape



* Note: For runs >50ft use a turnbuckle on both ends

Self-Supporting MaxCell®: Installation Steps

Step 9: Slit a small opening b/w the cable and seam and secure using conduit purlin clamp (B)



See Appendix A for recommended alternate methods

Self-Supporting MaxCell®: Installing Cable

For multiple cable installations half hitch the group 3-4 times



Tape the cable bundle using vinyl electrical tape



Self-Supporting MaxCell®: Attachment

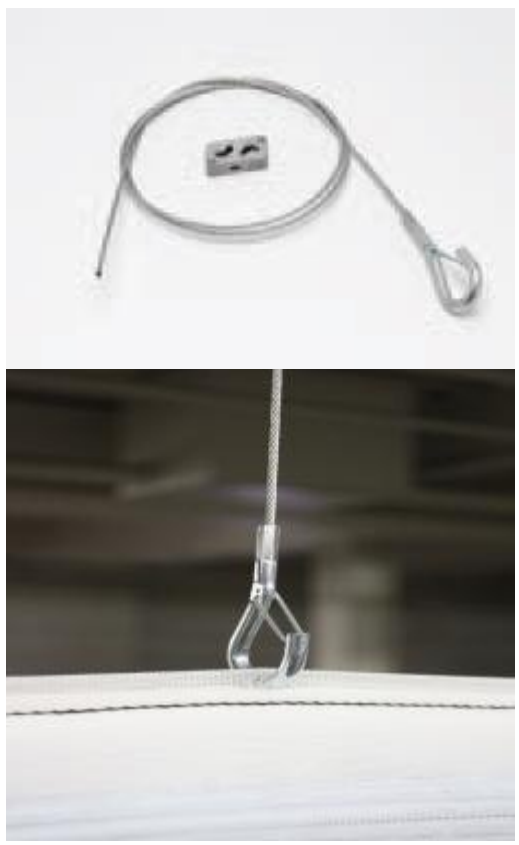
Approved Alternative Support Methods

Panduit Plenum Rated Tak Ty



Load Rating – 40lbs

**Cooper B-Line Kwik Wire system
BKH Series Hook**



Load Rating – 25-150lbs

Self-Supporting MaxCell®: Attachment

Approved Alternative Support Methods

CADDY
Concrete fixing eyebolt screw



Load Rating – 155lbs

Cooper B-Line Kwik Wire system
BKA Angle bracket for ceilings



Load Rating – 0-30lbs

Self-Supporting MaxCell®: Bowline Knot



Form a small loop leaving enough rope for the desired loop size



Bring the end of rope under the loop



Pass the end of the rope through the loop



Pass the rope around the standing end.



Continue around the standing end.



Pass the end back through the small loop

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Future Network Flexibility

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