



2025

# INTERFERENCE PRODUCT GUIDE



ConcealFab, a Valmont company has been the industry leader for small cell infrastructure, PIM interference mitigation, and government concealment solutions for over a decade. Today, you can find our products along city streets, towers, rooftops, stadiums, and airports.

We've been facilitating rapid site deployments for major wireless operators around the nation by staying true to our values -- global radio OEM partnerships, high-quality engineering, and in-house manufacturing. In years past, we were honored as an Inc. 5000 fastest-growing company in the nation. Today, we're proud to announce that we've joined the Valmont family.

Our mission is to offer our customers the most comprehensive portfolio of 5G infrastructure in the world and to partner with the nation's largest utilities, municipalities, and REITs.

FOUNDED IN  
**2007**

ACQUIRED IN  
**2022**  
BY VALMONT  
INDUSTRIES

MANUFACTURING SPACE  
**160K**  
SQUARE FT.

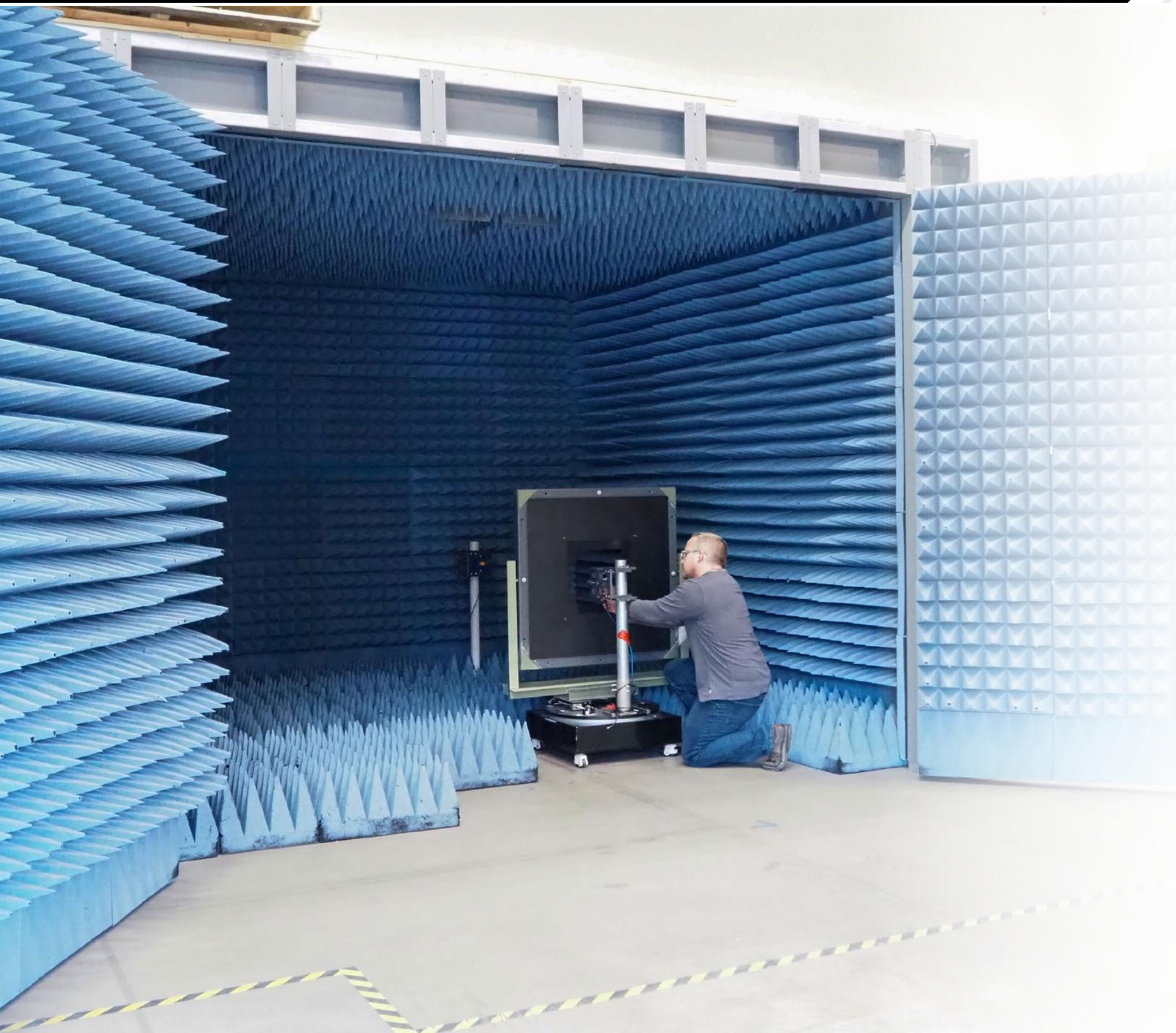
OVER  
**10+**  
YEARS OF SMALL CELL  
INDUSTRY EXPERIENCE

valmont 

ConcealFab®  
A Valmont COMPANY

platinum  
REGISTRATION, INC.  
ISO 9001:2015  
CERTIFIED

  
MADE IN USA



## RADIATED PIM TESTING

ConcealFab has a purpose built anechoic chamber designed for performing radiated PIM tests in accordance with IEC 62037-8. ConcealFab can perform product certification tests at 600 MHz, 700 MHz, 850 MHz, 1900 MHz and 2100 MHz using test equipment from Anritsu and Kaelus.

## MATERIAL TESTING

ConcealFab can characterize the performance of concealment materials from 1 GHz to 40 GHz in the same anechoic chamber. Capabilities include both near field and far field transmission loss measurements as well as antenna pattern measurements. ConcealFab owns 28 GHz and 39 GHz Anokiwave phased array antennas for measuring antenna pattern performance at mmW frequencies.

## EXTERNAL PIM OVERVIEW

Passive intermodulation (PIM) is a form of interference created when downlink signals at a cell site mix at “non-linear” objects in the RF path. Any loose metal-to-metal contact or dissimilar metal contact in front of or in the reactive near field behind an antenna can generate PIM.

## COMMON SOURCES OF EXTERNAL PIM:

### METAL OBJECTS IN FRONT OF ANTENNAS

Cable trays, air handling units, sky lights and vent pipes are just a few of the metal objects commonly found on rooftops in front of base station antennas. Many of these items are made from sheet metal with loosely touching metal-to-metal surfaces.



### ROOFING MATERIALS / CONSTRUCTION

Roofs are engineered to prevent water ingress and provide thermal insulation for buildings. They are not designed with PIM in mind. Some of the common problems found include overlapping steel deck members, plates and screws used to secure insulation and overlapping sheet metal used for flashing. Many of these issues are below the roof membrane and not visible by just looking at the roof.



### GALVANIC CORROSION

Stainless steel and galvanized steel are at opposite ends of the galvanic series and small pockets of corrosion will form where these materials touch. These corrosion pockets do not present a structural concern, but they do generate significant PIM when close to base station antennas.



### METAL SNAP-IN HANGERS

Metal snap-in style cable hangers are very convenient given they require no tools for installation. Unfortunately, the loosely touching metal-to-metal interfaces between hangers are prime sources of PIM, as are the galvanic corrosion pockets created when hangers are attached to galvanized steel support brackets.



### HOSE CLAMPS

Stainless steel hose clamps are deployed by the thousands in wireless infrastructure to secure cable support brackets. Unfortunately, the galvanic mismatch between the stainless-steel banding and galvanized steel pipe generates PIM. Hose clamps also have a “tail” that can lightly touch other steel members and cause PIM.

### METAL STRUT FASTENERS

Metal strut is used at cell sites to support a wide variety of objects including RF cables, radios and fiber distribution boxes. While the strut itself is generally low PIM, the interfaces between the strut and just about every other metal object is not low PIM. Nut retaining springs, snap-in stainless-steel fasteners, bolted connects between struts and connections between the strut and round members at sites can all be sources of PIM.



### ANGLE ADAPTERS

Galvanized steel angle is commonly used as a structural member on both rooftop sites and tower sites. Angle adapters are deployed along the length of these angles to secure RF, power, RET and fiber cables. PIM is generated by the galvanic mismatch between stainless-steel angle adapters and galvanized steel angle. PIM also occurs where the stainless-steel set screw digs into the galvanized steel surface.



## HOW TO MITIGATE EXTERNAL PIM:

### ELIMINATE GALVANIC MISMATCHES AT JUNCTIONS

Galvanic mismatches can be eliminated by making sure the same metal & finish is used on both sides of a junction.

### ENSURE HIGH CONTACT PRESSURE AT JUNCTIONS

It is perfectly fine for metal to touch metal as long as the junction between parts is designed to maintain high contact pressure. Large contacting surfaces should be avoided.

### INSULATE JUNCTIONS

If high contact pressure between metal parts can't be guaranteed, or galvanic mismatches prevented, insulate the parts to prevent electrical contact.

### BLOCK RF FROM REACHING THE JUNCTION

If a metal to metal junction can't be fixed using one of the above methods, Install a RF barrier material to prevent RF energy from reaching the non linear junction.



Scan Here For PIM Hygiene Application Note

## PIM HUNTING

### PIM HUNTING

The PIM test probe is used in conjunction with other test and measurement equipment to precisely locate external PIM sources in the field. Once PIM locations are identified, mitigation materials available from ConcealFab can be applied to reduce the PIM levels and improve site performance.

**007320-01**

Part Number

### CERTIFICATION TRAINING

ConcealFab offers an intense one-day instructor led training course to teach wireless professionals how to precisely locate and mitigate external PIM at cell sites. The course uses a combination of theory and practical, hands-on exercises to build user confidence.



### EXTERNAL PIM SOURCES

- Diode based PIM source
- Optimized for sub-1 GHz performance
- 900643 includes RF shielded pouch for field use

**900643**

Part Number

### CONNECTOR CLEANING TOOLS

- Use with alcohol wipes
- 7-16 and 4.3-10 series RF connectors

**900644-10**

Part Number | Qty. 10

**900644-100**

Part Number | Qty. 100

## PIM FOIL

PIM Foil is a light weight, temporary RF barrier material that can be deployed at cell sites to help isolate PIM. PIM Foil is 1/10th the weight of ConcealFab's durable PIM Blankets making it easier and faster to cover large areas at rooftop cell sites. Not recommended for wind speeds > 10 mph. A soft case is available for storing and transporting PIM Foil material.



Scan Here  
For PIM Shield® Foil



| Part Number    | Description   |
|----------------|---|
| 900964-18-100  | PIM Foil, 18-Inch x 100-FT Roll                           |
| 900964-36-100  | PIM Foil, 36-Inch x 100-FT Roll                           |
| 900964-KIT-101 | PIM Foil Kit, 3x 36-Inch, 2x 18-Inch (includes soft case) |
| 901067         | PIM Foil Soft Case  |

### PIM FOIL APPLICATION



## PIM BLANKETS

ConcealFab's PIM blankets are temporary RF barriers that can be deployed to help isolate sources of passive intermodulation (PIM). When a PIM blanket is placed over an external PIM source, PIM from that source is typically reduced by >30 dB.

### KEY FEATURES

- Low PIM
- High RF attenuation
- Heavy duty vinyl construction
- Integrated tie-down loops (see table)



### PIM BLANKETS

| Part Number   | Length          | Width          | Loops | Corners |
|---------------|-----------------|----------------|-------|---------|
| 007640-120060 | 120 in (3.05 m) | 60 in (1.52 m) | 6     | Rounded |
| 007640-060060 | 60 in (1.52 m)  | 60 in (1.52 m) | 4     | Rounded |
| 007640-060030 | 60 in (1.52 m)  | 30 in (0.75 m) | 4     | Rounded |
| 007640-030030 | 30 in (0.75 m)  | 30 in (0.75 m) | 4     | Rounded |



### SIDE BLANKET

Side PIM Blankets are used with ConcealFab's Absorber Kits to help determine the direction of external PIM sources relative to site antennas.

| Part Number   | Length           | Width           | Loops |
|---------------|------------------|-----------------|-------|
| 007640-240008 | 240 in (6.096 m) | 8 in (0.2032 m) | 2     |

### PIM BLANKET KITS

| Part Number    | Description  |
|----------------|--|
| 007640-KIT-101 | PIM Blanket Kit, 2x 120x60, 2x 60x60, 2x 60x30, 2x 30x30 |
| 007640-KIT-102 | PIM Blanket Kit, 3x 120x60, 2x 60x60                     |
| 007640-KIT-103 | PIM Blanket Kit, 4x 120x60                               |
| 007640-KIT-104 | PIM Blanket Kit, 8x 60x60                                |
| 007640-KIT-201 | PIM Blanket Kit, 4x 120x60, 4x 60x60, 4x 60x30, 4x 30x30 |
| 007640-KIT-202 | PIM Blanket Kit, 6x 120x60, 3x 60x60                     |
| 007640-KIT-203 | PIM Blanket Kit, 5x 120x60, 5x 60x60                     |



## PIM ABSORBER KITS

### PIM ABSORBER FRONT BLANKET KIT, LARGE ANTENNAS

The front PIM Absorber kit is a patented low PIM blanket assembly designed to be secured to the front face of base station antennas. The front absorber kit suppresses forward radiation from the antenna with minimum PIM generation and minimum reflection back into the antenna feed system.



**901728**  
Part Number



### BACK ABSORBER KITS

Back PIM Absorber kit panels are designed to be installed between the back of a base station antenna and the antenna mounting pipe. The back absorber panels suppress rear radiation from the antenna with minimum PIM generation.



### ABSORBER KITS

| Part Number   | Description                                    | Kit Includes:   |
|---------------|--|---|
| 901728        | PIM Absorber Front Blanket Kit, Large Antennas | <ul style="list-style-type: none"> <li>• 1x PIM blanket with integrated clips and tie-down loops</li> <li>• 1x Pole attach strap</li> <li>• 4x RF absorber panels, 24-inch x 24-inch x 4-inch</li> <li>• 4x Adjustable bungee straps</li> </ul> |
| 901125        | PIM Absorber Kit, Back, 2-IN                   | <ul style="list-style-type: none"> <li>• 3x RF absorber panels, 24-inch x 24-inch x 2-inch</li> <li>• 2x RF absorber panels, 12-inch x 24-inch x 2-inch</li> </ul>  |
| 901162        | PIM Absorber, Back, 1-IN                       | <ul style="list-style-type: none"> <li>• 3x RF absorber panels, 24-inch x 24-inch x 1-inch</li> <li>• 2x RF absorber panels, 12-inch x 24-inch x 1-inch</li> </ul>  |
| 901230        | Absorber Kit Soft Case                         | <ul style="list-style-type: none"> <li>• 28-inch x 28-inch x 13-inch main compartment</li> <li>• Pouch in front to store bungee straps</li> </ul>   |
| 901728-Bundle | PIM Absorber Bundle, Large Antennas            | <ul style="list-style-type: none"> <li>• 1x 901728 – Absorber Kit, Front</li> <li>• 1x 901162 – Absorber Kit, Back, 1-inch</li> <li>• 2x 901230 – Absorber Kit Soft Case</li> </ul>   |

\*Two Absorber Kit Soft Cases are required to transport one Front Absorber Kit and one Back Absorber Kit

## PIM SHIELD® TAPE

PIM Shield® tape is a rapidly deployable RF barrier able to bond to a wide variety of surfaces including metals, single-ply roofing, multi-ply roofing, concrete, brick and wood. The tape's highly compliant synthetic resin adhesive enables strong bonds to irregular surfaces.

### KEY FEATURES

- Low PIM
- High RF attenuation
- UV stable TPO outer protective layer
- High tack synthetic resin adhesive
- Silicone release liner

| Part Number    | Roll Width | Roll Length | Color | Qty. Per Case |
|----------------|------------|-------------|-------|---------------|
| 008587-06-25-W | 6 - Inch   | 25 ft.      | White | 4             |
| 008587-06-25-B | 6 - Inch   | 25 ft.      | Black | 4             |
| 008587-12-25-W | 12 - Inch  | 25 ft.      | White | 2             |
| 008587-12-25-B | 12 - Inch  | 25 ft.      | Black | 2             |



## PIM SHIELD® PIM MITIGATION PAINT

PIM Shield® PIM mitigation paint is a conductive acrylic polymer with enhanced elasticity designed to reduce external passive intermodulation (PIM) at cellular base stations. PIM Shield® paint is intended for large, flat surfaces and should NOT be applied directly to antenna mounting structures. Use PIM Seal® Conductive Caulk to reduce PIM at metal-to-metal contacts on antenna mounting structures.

### KEY FEATURES

- |                       |                     |
|-----------------------|---------------------|
| • Low PIM             | • UV stable Acrylic |
| • High RF Attenuation | • Water based       |
| • Crack Resistant     | • Non-flammable     |



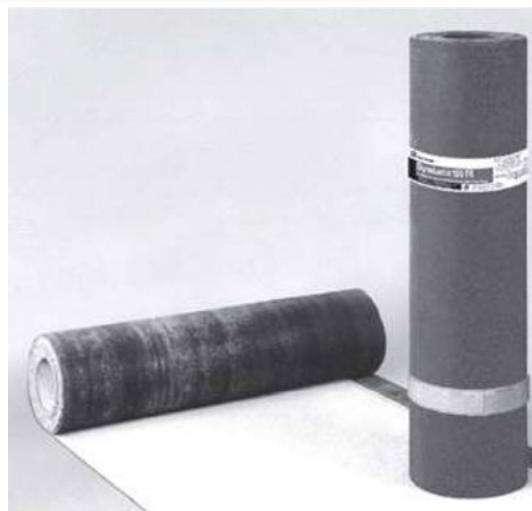
Scan for application information

| Part Number  | Description   | Qty. Per Case | Case Weight (lbs.) | Case Dimensions (in.)                  |
|--------------|---|---------------|--------------------|--|
| 901087-0     | PIM Shield PIM Mitigation Paint, 1 Quart                          | 6             | 15.9               | 13.5 x 9.3 x 5.5                       |
| 901087-0-PKG | PIM Shield PIM Mitigation Paint, 1 Quart, w/protective packaging  | 1             | 3.0                | 7.3 x 7.3 x 7.5                        |
| 901087-1     | PIM Shield PIM Mitigation Paint, 1 Gallon                         | 4             | 41                 | 14 x 14 x 8.5                          |
| 901087-1-PKG | PIM Shield PIM Mitigation Paint, 1 Gallon, w/protective packaging | 1             | 10.5               | 10.5 x 10.5 x 12.5                     |
| 901087-5     | PIM Shield PIM Mitigation Paint, 5 Gallon                         | 1             | 55                 | 13 x 13 x 16.5<br>*Must ship on pallet |

## PIM SHIELD® ROOFING

ConcealFab has partnered with Johns Manville, a global leader in the roofing industry, to co-develop reliable roofing materials able to mitigate passive intermodulation at cell sites.

**JM** Johns Manville PIM Shield® roofing is a multi-ply Styrene-Butadiene-Styrene (SBS) modified bitumen roof membrane sold exclusively through ConcealFab. The material includes ceramic coated granules on the top surface for solar reflectivity and membrane protection. An internal PIM Shield® layer bonded between two SBS modified bitumen layers form a water-tight RF barrier able to provide decades of PIM protection.



## PIM SEAL® PIM MITIGATION CAULK

PIM Seal® PIM mitigation caulk is a thickened version of PIM Paint that can be used to fill gaps and seal RF from reaching PIM sources generated at contacting surfaces. Like PIM Paint, PIM Seal PIM mitigating caulk forms a highly elastic seal that resists cracking over a wide range of temperature extremes.



| Part Number  | Description                                 | Granules | Application Method |
|--------------|---|----------|--------------------|
| DL180FRPIM   | DynaLastic 180 FR PIM, 10 m x 1 m roll      | S        | HA, CA             |
| DL180FRCRGPM | DynaLastic 180 FR CR G PIM, 10 m x 1 m roll | HR       | HA, CA             |

| Part Number | Description                                 | Qty. Per Case | Case Weight (lbs.) | Case Dimensions (in.) |
|-------------|---|---------------|--------------------|-----------------------|
| 901088      | PIM Seal PIM Mitigation Caulk, 10.5 oz tube | 12            | 11.6               | 6.3 x 8.3 x 12        |

## HYBRID METAL / PLASTIC SNAP-INS

Traditional metal snap-in hangers provide fast assembly but generate high levels of PIM at the contacting surfaces between hangers and at the hanger attachment interface. ConcealFab's patented "Hybrid" snap-in design provides insulation at the mating interfaces to prevent metal-to-metal contact. "Hybrid" snap-ins deliver low PIM performance along with the strength and installation ease of FIMO's patented snap-in design.

### KEY FEATURES

- Low PIM
- 360° rotation at mounting interface
- Easy to install / remove / reposition
- High strength
- No tools required



| Part Number  | Description  | Cable Diameter (mm) | Height            | Length          | Width           | Qty. Per Case |
|--------------|--|---------------------|-------------------|-----------------|-----------------|---------------|
| PSHS-1319-10 | PIM Shield Hybrid Snap-In, 13 to 19 mm (1/2 in), Qty. 10   | 13 to 19            | 40 mm (1.57 in)   | 40 mm (1.57 in) | 36 mm (1.42 in) | 10            |
| PSHS-2630-10 | PIM Shield Hybrid Snap-In, 26 to 30 mm (7/8 in), Qty. 10   | 26 to 30            | 40 mm (1.57 in)   | 40 mm (1.57 in) | 36 mm (1.42 in) | 10            |
| PSHS-3642-10 | PIM Shield Hybrid Snap-In, 36 to 42 mm (1-1/4 in), Qty. 10 | 36 to 42            | 75.3 mm (2.96 in) | 45 mm (1.77 in) | 62 mm (2.44 in) | 10            |
| PSHS-4852-10 | PIM Shield Hybrid Snap-In, 48 to 52 mm (1-5/8 in), Qty. 10 | 48 to 52            | 75.3 mm (2.96 in) | 45 mm (1.77 in) | 62 mm (2.44 in) | 10            |

## PLASTIC SNAP-INS

PIM Shield® Plastic Snap-ins provide a low passive intermodulation method to secure RF, fiber, power and RET cables in high risk PIM zones. Four all-plastic designs provide inherently PIM-free support for cables ranging from 4mm to 17mm in diameter.

### KEY FEATURES

- UV stable, glass filled nylon
- Low PIM
- Easy to install / remove / reposition
- No tools required
- 360° rotation at mounting interface



| Part Number  | Description   | Cable Diameter (mm) | Height          | Length          | Width           | Qty. Per Case |
|--------------|---|---------------------|-----------------|-----------------|-----------------|---------------|
| PSPS-0407-10 | PIM Shield Plastic Snap-In, 4 to 7 mm, Qty. 10            | 4 to 7              | 31 mm (1.22 in) | 30 mm (1.18 in) | 36 mm (1.42 in) | 10            |
| PSPS-0710-10 | PIM Shield Plastic Snap-In, 7 to 10 mm, Qty. 10           | 7 to 10             | 31 mm (1.22 in) | 30 mm (1.18 in) | 36 mm (1.42 in) | 10            |
| PSPS-1014-10 | PIM Shield Plastic Snap-In, 10 to 14 mm, Qty. 10          | 10 to 14            | 31 mm (1.22 in) | 30 mm (1.18 in) | 36 mm (1.42 in) | 10            |
| PSPS-1417-10 | PIM Shield Plastic Snap-In, 14 to 17 mm (1/2 in), Qty. 10 | 14 to 17            | 31 mm (1.22 in) | 30 mm (1.18 in) | 36 mm (1.42 in) | 10            |

## CABLE CUSHIONS

Cable Cushions that fit inside ConcealFab's "Hybrid" snap-ins are available to support smaller diameter RET, DC power, grounding and fiber optic cables. Cable Cushions are color-coded for easy identification and inspection.



| Part Number  | Description  | Cable Diameter (mm) | Install inside Hybrid Snap-In | Color  | Qty. Per Case |
|--------------|--|---------------------|-------------------------------|--------|---------------|
| PSCC-1001-10 | PIM Shield Cable Cushion, 4.5 to 6.5 mm, Qty. 10   | 4.5 - 6.5           | PSHS-1319-10                  | Blue   | 10            |
| PSCC-1002-10 | PIM Shield Cable Cushion, 6.6 to 8.5 mm, Qty. 10   | 6.6 - 8.5           | PSHS-1319-10                  | Gray   | 10            |
| PSCC-1003-10 | PIM Shield Cable Cushion, 8.6 to 10.5 mm, Qty. 10  | 8.6 - 10.5          | PSHS-1319-10                  | Black  | 10            |
| PSCC-2001-10 | PIM Shield Cable Cushion, 10.6 to 12.5 mm, Qty. 10 | 10.6 - 12.5         | PSHS-2630-10                  | Orange | 10            |
| PSCC-2002-10 | PIM Shield Cable Cushion, 12.6 to 15.5 mm, Qty. 10 | 12.6 - 15.5         | PSHS-2630-10                  | Black  | 10            |
| PSCC-2003-10 | PIM Shield Cable Cushion, 15.6 to 17.5 mm, Qty. 10 | 15.6 - 17.5         | PSHS-2630-10                  | Gray   | 10            |
| PSCC-4001-10 | PIM Shield Cable Cushion, 19.6 to 30.3 mm, Qty. 10 | 19.6 - 30.3         | PSHS-4852-10                  | Black  | 10            |

## CABLE SUPPORT BLOCKS

When supported and installed correctly, Cable Support Blocks provide a reliable, low PIM method for securing cables at cell sites. ConcealFab offers high strength, UV stable Cable Support Blocks that securely grip two cables without deforming the outer RF conductor. Cable Support Blocks are often selected for high wind zones due to their superior strength and rigid support.

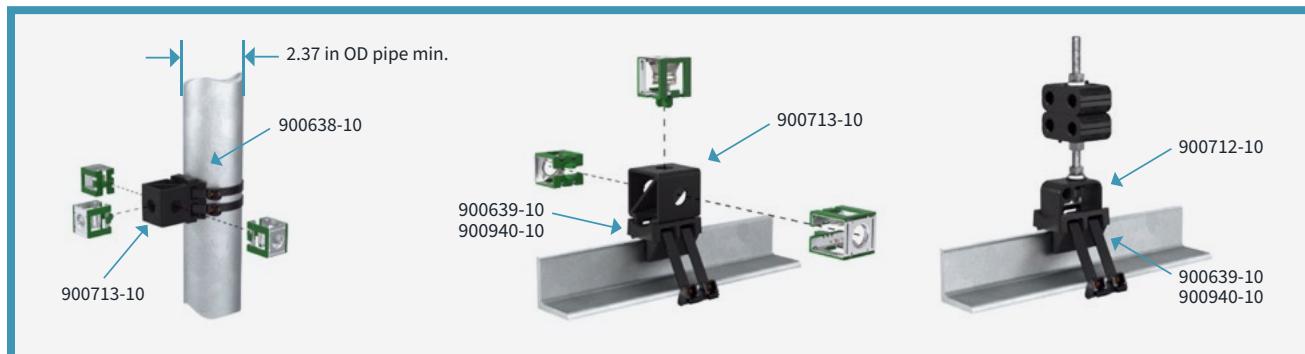


| Part Number  | Description  | Cable Diameter (mm) | Height          | Length           | Qty. Per Case |
|--------------|--|---------------------|-----------------|------------------|---------------|
| PSCB-0405-10 | PIM Shield Cable Block, 4.5 to 5.5 mm, Qty. 10                 | 4.5 - 5.5           | 16 mm (0.63 in) | 42 mm (1.65 in)  | 10            |
| PSCB-0608-10 | PIM Shield Cable Block, 6 to 8 mm, Qty. 10                     | 6.0 - 8.0           | 20 mm (0.79 in) | 51 mm (2.01 in)  | 10            |
| PSCB-0809-10 | PIM Shield Cable Block, 8 to 9 mm, Qty. 10                     | 8.0 - 9.0           | 20 mm (0.79 in) | 51 mm (2.01 in)  | 10            |
| PSCB-1011-10 | PIM Shield Cable Block, 10 to 11 mm, Qty. 10                   | 10.0 - 11.0         | 20 mm (0.79 in) | 51 mm (2.01 in)  | 10            |
| PSCB-1213-10 | PIM Shield Cable Block, 12 to 13 mm, Qty. 10                   | 12.0 - 13.0         | 27 mm (1.06 in) | 60 mm (2.36 in)  | 10            |
| PSCB-1314-10 | PIM Shield Cable Block, 13 to 14 mm, (1/2 in Hi-Flex), Qty. 10 | 13.0 - 14.0         | 27 mm (1.06 in) | 60 mm (2.36 in)  | 10            |
| PSCB-1517-10 | PIM Shield Cable Block, 15.5 to 17 mm, (1/2 in), Qty. 10       | 15.5 - 17.0         | 27 mm (1.06 in) | 60 mm (2.36 in)  | 10            |
| PSCB-2123-10 | PIM Shield Cable Block, 21 to 23 mm, (5/8 in), Qty. 10         | 21.0 - 23.0         | 37 mm (1.46 in) | 84 mm (3.31 in)  | 10            |
| PSCB-2728-10 | PIM Shield Cable Block, 27 to 28 mm, (7/8 in), Qty. 10         | 27.0 - 28.0         | 37 mm (1.46 in) | 84 mm (3.31 in)  | 10            |
| PSCB-3940-10 | PIM Shield Cable Block, 39 to 40 mm, (1-1/4 in), Qty. 10       | 39.0 - 40.0         | 54 mm (2.13 in) | 108 mm (4.25 in) | 10            |
| PSCB-5052-10 | PIM Shield Cable Block, 50 to 52 mm, (1-5/8 in), Qty. 10       | 50.0 - 52.0         | 66 mm (2.60 in) | 133 mm (5.24 in) | 10            |

Sold in bags of 20 halves to make 10 Cable Support Blocks

## UNIVERSAL CABLE SUPPORT SYSTEM

ConcealFab's patented Universal Mounting System consists of interchangeable low PIM plastic bases and adapters for securing cables to round or angle shaped members at cell sites using two ConcealFab Cable Straps. The Universal Mounting System supports a wide variety of low PIM cable support scenarios using only five unique parts.



| Part Number | Description   | Qty. Per Case |
|-------------|---|---------------|
| 900638-10   | PIM Shield Universal Base, Round Member Adapter, Qty. 10    | 10            |
| 900639-10   | PIM Shield Universal Base, Angle Adapter, 1/4-inch, Qty. 10 | 10            |
| 900940-10   | PIM Shield Universal Base, Angle Adapter, 3/8-inch, Qty. 10 | 10            |
| 900712-10   | PIM Shield Threaded Rod Adapter Block, Qty. 10              | 10            |
| 900713-10   | PIM Shield Snap-in Adapter Block, 3 Position, Qty. 10       | 10            |

The PIM Shield Universal Base adapters provide a low passive intermodulation method to secure a variety of cable sizes and snap-in style cable hangers in high risk PIM zones.

### KEY FEATURES

- Low cost
- Low PIM
- UV stable, glass-filled Nylon construction



| Part Number | Description   | Qty. Per Case |
|-------------|---|---------------|
| 900638-10   | PIM Shield Round Member Adapter, Qty. 10                  | 10            |
| 900639-10   | PIM Shield Universal Base, Angle Adapter, 1/4-in, Qty. 10 |               |
| 900713-10   | PIM Shield Snap-in Adapter Block, 3 Position, Qty. 10     |               |

## CABLE STRAPS

ConcealFab's non-metallic cable support straps are a low PIM replacement for hose clamps at cell sites. The straps are designed from high strength, weather resistant acetal and provide >200 lbs. loop tensile strength at 70°C (158°F) and >400 lbs. loop tensile strength at -40°C (-40°F). Straps are supplied cut to length with the locking head pre-installed.



| Part Number  | Description   | Grip Range                      | Qty. Per Case |
|--------------|---|---------------------------------|---------------|
| 900443-16-50 | PIM Shield Cable Strap, Acetal, 1/2 in x 16 in, Qty. 50 | Up to 3 Inch Pipe (3.5-Inch OD) | 25            |
| 900443-27-25 | PIM Shield Cable Strap, Acetal, 1/2 in x 27 in, Qty. 25 | Up to 6 Inch Pipe (6.6-Inch OD) | 30            |

## PIM SHIELD® BUTTONS

PIM Shield® Buttons are a low-PIM method to secure RF, fiber, power and RET cables in high risk PIM zones. ConcealFab's patented design is intended for use with PIM Shield Cable Support Straps 900443-16-50 or 900443-27-25 (sold separately).

### KEY FEATURES

- UV stable, glass filled nylon
- Easy to install / remove / reposition
- No tools required



| Part Number | Description                | Qty. Per Case |
|-------------|----------------------------|---------------|
| 901738-10   | PIM Shield Button, Qty. 10 | 10            |

## MULTI-FUNCTION CABLE SUPPORT SYSTEM

ConcealFab's Multi-Function Cable Support system provides a low cost, low PIM method to secure cables to round or angle members at cell sites. These unique, patent pending designs include molded-in features for secure attachment to pipes or angle member flanges, eliminating the need for multiple parts.

Molded-in features provide secure attachment to round or angle members.

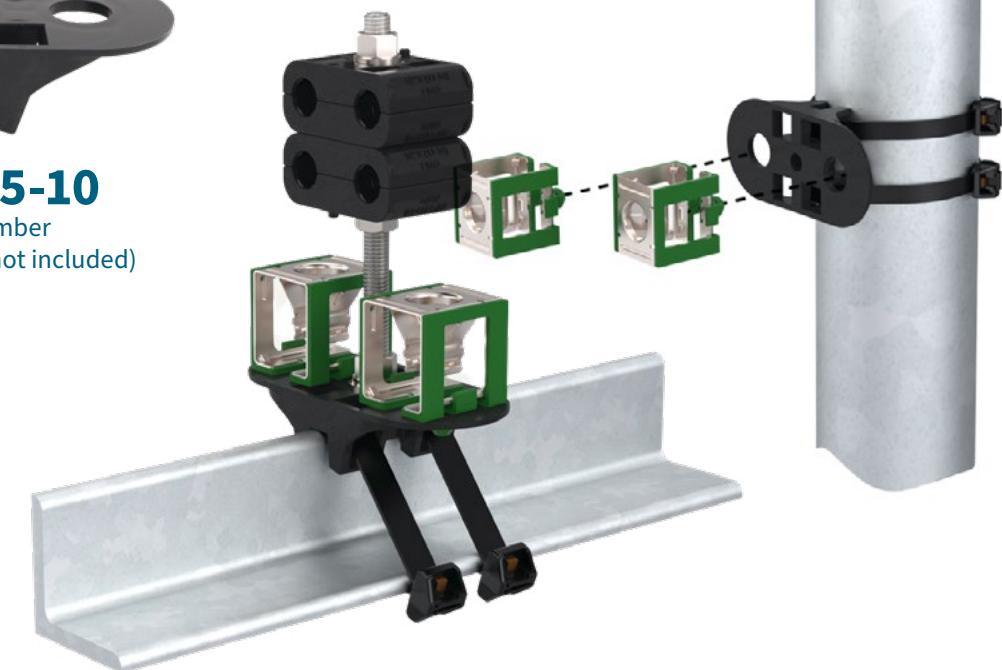


| Part Number | Description   | Qty. Per Case |
|-------------|---|---------------|
| 901043-10   | PIM Shield Multi-Function Cable Support Base, SS, Qty.10      | 10            |
| 901044-10   | PIM Shield Multi-Function Snap-in Adapter, 1 Position, Qty.10 | 10            |
| 901045-10   | PIM Shield Multi-Function Snap-in Adapter, 2 Position, Qty.10 | 10            |



**901045-10**

Part Number  
(3/8" inner nut not included)



**901044-10**

Part Number



**901043-10**

Part Number  
(3/8" SS inner nut included)



## SNAP-IN SUPPORTS

ConcealFab's all-plastic snap-in adapters provide low PIM mounting locations for snap-in style cable hangers in high-risk PIM zones. The 5-position adapter is ideally suited for attachment to the flat side of angle members using two PIM Shield® cable support straps.



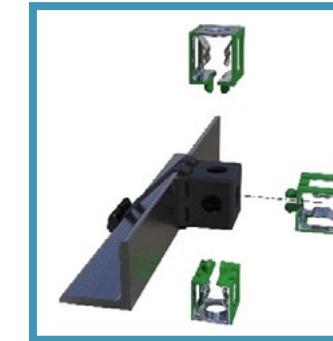
900860-10

Part Number



900945-10

Part Number



## RF SAFETY SIGN SUPPORTS

The PIM Shield RF Safety Sign Support provides a low passive intermodulation method for securing metal or plastic RF Safety signs in high-risk PIM zones.



| Part Number | Description   | Qty. Per Case |
|-------------|---|---------------|
| 900860-10   | PIM Shield Snap-in Adapter, Trapezoid, 3 Position, Qty.10 | 10            |
| 900945-10   | PIM Shield Snap-in Adapter, Cube, 5 Position, Qty.10      | 10            |

| Part Number | Description   | Qty. Per Case |
|-------------|---|---------------|
| 901706-10   | Kit, RF Safety Sign Support, Round or Flat Mounting | 10            |
| 901607      | RF Safety Sign Stand                                | 1             |

## CABLE SUPPORT BARS

PIM Shield Cable Support Bars provide a low passive intermodulation mounting system to secure multiple Hybrid Snap-ins (sold separately) in high-risk PIM zones. The 4 Position Cable Support Bar Kit includes the cable support bar, plastic base, 8-inch stainless-steel threaded rod and stainless-steel hardware in one convenient kit.

901041

Part Number

(Kit includes threaded rod hardware plus plastic base)



900351-10

Part Number

(Bar Only)

| Part Number | Description  | Qty. Per Case |
|-------------|--|---------------|
| 900351-10   | PIM Shield Cable Support Bar, 4 Position, SS, Qty.10             | 10            |
| 901041      | PIM Shield Cable Support Bar, 4 Position, w.Plastic Base, Qty.10 | 10            |

## INSTALLATION TOOLS

## TORQUE WRENCHES

Proper installation torque is required for any bolted connection to achieve low PIM performance. Too much torque can result in bracket deformation and too little torque can result in loose metal-to-metal contact. ConcealFab has determined the optimum torque for each of its PIM Shield® Cable Support Systems and offers convenient, fixed torque wrenches for each torque requirement.



900053

Part Number

| Part Number | Head Size | Torque   | Use with          | Grip Color |
|-------------|-----------|----------|-------------------|------------|
| 901039      | 9/16-inch | 4 FT-LB  | 3/8-Inch Hardware | Red        |
| 900053      | 9/16-inch | 10 FT-LB | 3/8-Inch Hardware | Blue       |
| 900412      | 17-mm     | 15 FT-LB | M10 Hardware      | Blue       |
| 900413      | 3/4-inch  | 20 FT-LB | 1/2-Inch Hardware | Blue       |

Each kit contains 10 sets of the hardware shown

## CABLE STRAP INSTALLATION TOOL

Unlike other tools that can slip on the straps, this installation tool incorporates a more aggressive grip surface to achieve maximum friction while tensioning.



900442

Part Number

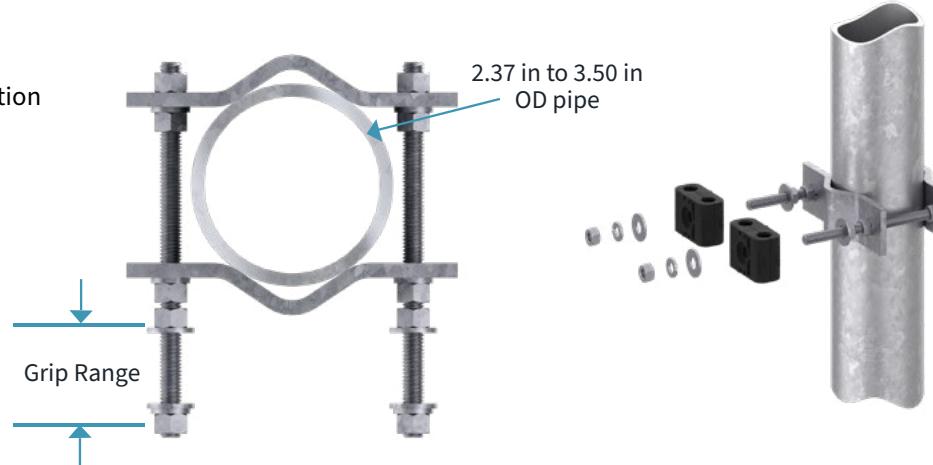


## SUPPORT BRACKETS

ConcealFab offers heavy duty galvanized steel support brackets for securing Cable Support Blocks to antenna mounting pipes. The kit includes galvanized threaded rods and galvanized hardware to eliminate all dissimilar metal contacts. Kits are available with different threaded rod lengths based on the grip range desired.

### KEY FEATURES

- Low PIM
- Galvanized steel construction
- Supports up to 12 cables



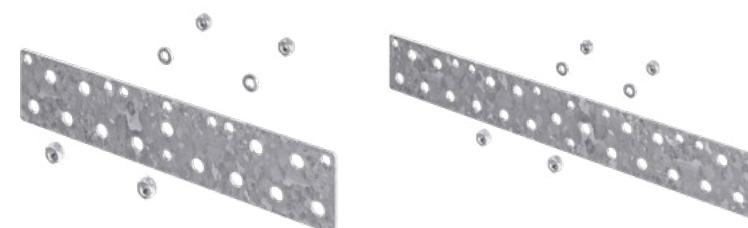
| Part Number  | Description                                      | Grip Range      |
|--------------|--|-----------------|
| 009718-01-10 | PIM Shield Cable Support Bracket, Small, Qty. 10 | 32 mm (1.25 in) |
| 009718-02-10 | PIM Shield Cable Support Bracket, Large, Qty. 10 | 95 mm (3.75 in) |

## HIGH CABLE COUNT SNAP-IN MOUNTING SYSTEM

ConcealFab offers simple, highly configurable mounting systems for securing large quantities of cables to round structural members at a cell site. The all galvanized steel construction with high clamping force provides consistent low PIM performance. Two different threaded rod lengths are available for placing support bars at varying distances from the pipe. Extra bar kits can be purchased and installed as needed.

### KEY FEATURES

- Low PIM
- Highly configurable
- Galvanized steel construction
- Up to 22 "Hybrid" snap-in support points

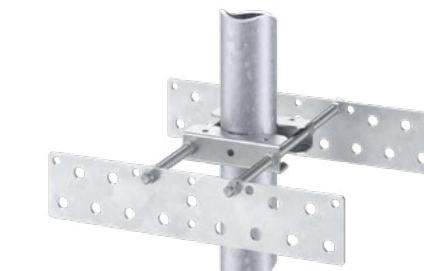


**900354**  
Part Number

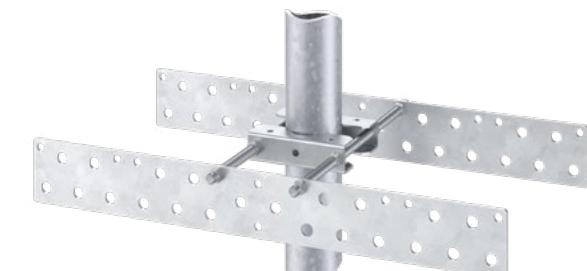
**900355**  
Part Number

| Part Number | Description  | Qty. Per Case |
|-------------|--|---------------|
| 900354      | PIM Shield Cable Support, Extra Bar Kit, 13-Position | 10            |
| 900355      | PIM Shield Cable Support, Extra Bar Kit, 22-Position | 10            |

## CABLE SUPPORT BARS



**901166-02-3**  
Part Number



**901167-02-3**  
Part Number

| Part Number | Description   | Qty. Per Case |
|-------------|---|---------------|
| 900352-01   | PIM Shield Cable Support Bar, Pole Mount Kit, 13-Position                         | 5             |
| 900352-02   | PIM Shield Cable Support Bar, Pole Mount Kit, 13-Position, Extended Range         | 5             |
| 900353-01   | PIM Shield Cable Support Bar, Pole Mount kit, 22-Position                         | 5             |
| 900353-02   | PIM Shield Cable Support Bar, Pole Mount kit, 22-Position, Extended Range         | 5             |
| 901166-02-3 | PIM Shield Cable Support Bar, Pole Mount Kit, 26 Position, Extended Range, 3 Pack | 1             |
| 901167-02-3 | PIM Shield Cable Support Bar, Pole Mount Kit, 44 Position, Extended Range, 3 Pack | 1             |

## CABLE SUPPORT BLOCK CONVERSION KIT

The 901217-3 cable support block conversion kit is intended to be used with ConcealFab's 901166-02-3 or 901167-02-3 bar kit site packs. Each kit includes the hardware needed to convert the bar kits to support RF cables using cable support blocks.

### EACH KIT INCLUDES:

- 30x – 3/8-16 UNC-2A, SS, threaded rods, 6-inch long
- 40x – 3/8-16 UNC-2B, SS, Nut
- 40x – 3/8-inch, SS, Flat Washer
- 30x – 3/8-inch, SS, Lock Washer
- 30x – Threaded rod insulators (pairs)
- 50x – Cable support block (pairs), designed for 15mm – 17mm cable

Each kit includes enough hardware to create 4 cable support stacks (with hardware to spare) as shown on each of the 6 bars provided with the 901166-02-3 or 901167-02-3 bar kits.



| Part Number | Description  | Qty. Per Case |
|-------------|--|---------------|
| 901217-3    | Cable Support Block Conversion Kit, PSCB-1517-10, 3 PK | 1             |

## THREADED RODS

PIM Shield® Threaded Rod Kits provide a low PIM mounting system to secure cables in high-risk PIM zones. To prevent galvanic corrosion, galvanized steel threaded rod kits should be used with galvanized support brackets and stainless-steel threaded rod kits should be used with stainless-steel support brackets.

### EACH KIT CONTAINS:

- 30x 3/8" Threaded rod
- 30x 3/8" Nut
- 30x Lock washer
- 30x Flat washer



### STAINLESS-STEEL THREADED ROD KITS

| Part Number | Description  | Qty. Per Case |
|-------------|--|---------------|
| 900210-10   | PIM Shield Threaded Rod Kit, SS, 3/8" x 2-in, Qty. 10  | 10            |
| 900211-10   | PIM Shield Threaded Rod Kit, SS, 3/8" x 6-in, Qty. 10  | 10            |
| 900212-10   | PIM Shield Threaded Rod Kit, SS, 3/8" x 8-in, Qty. 10  | 10            |
| 900381-10   | PIM Shield Threaded Rod Kit, SS, 3/8" x 12-in, Qty. 10 | 10            |



### GALVANIZED STEEL THREADED ROD KITS

| Part Number | Description   | Qty. Per Case |
|-------------|---|---------------|
| 900714-10   | PIM Shield Threaded Rod Kit, Galvanized, 3/8" x 6.5-in, Qty. 10 | 10            |
| 900715-10   | PIM Shield Threaded Rod Kit, Galvanized, 3/8" x 9-in, Qty. 10   | 10            |



### LOW-PIM CABLE DEPLOYMENT EXAMPLES

## THREADED ROD ADAPTER

The PIM Shield Threaded Rod Adapter is a low PIM solution for mounting 3/8-inch galvanized steel threaded hardware to 0.75-inch diameter galvanized steel snap-in cable hanger mounting holes.

| Part Number | Description   | Qty. Per Case |
|-------------|---|---------------|
| 901295-10   | PIM Shield Threaded Rod Adapter, Galvanized, Qty.10 | 10            |

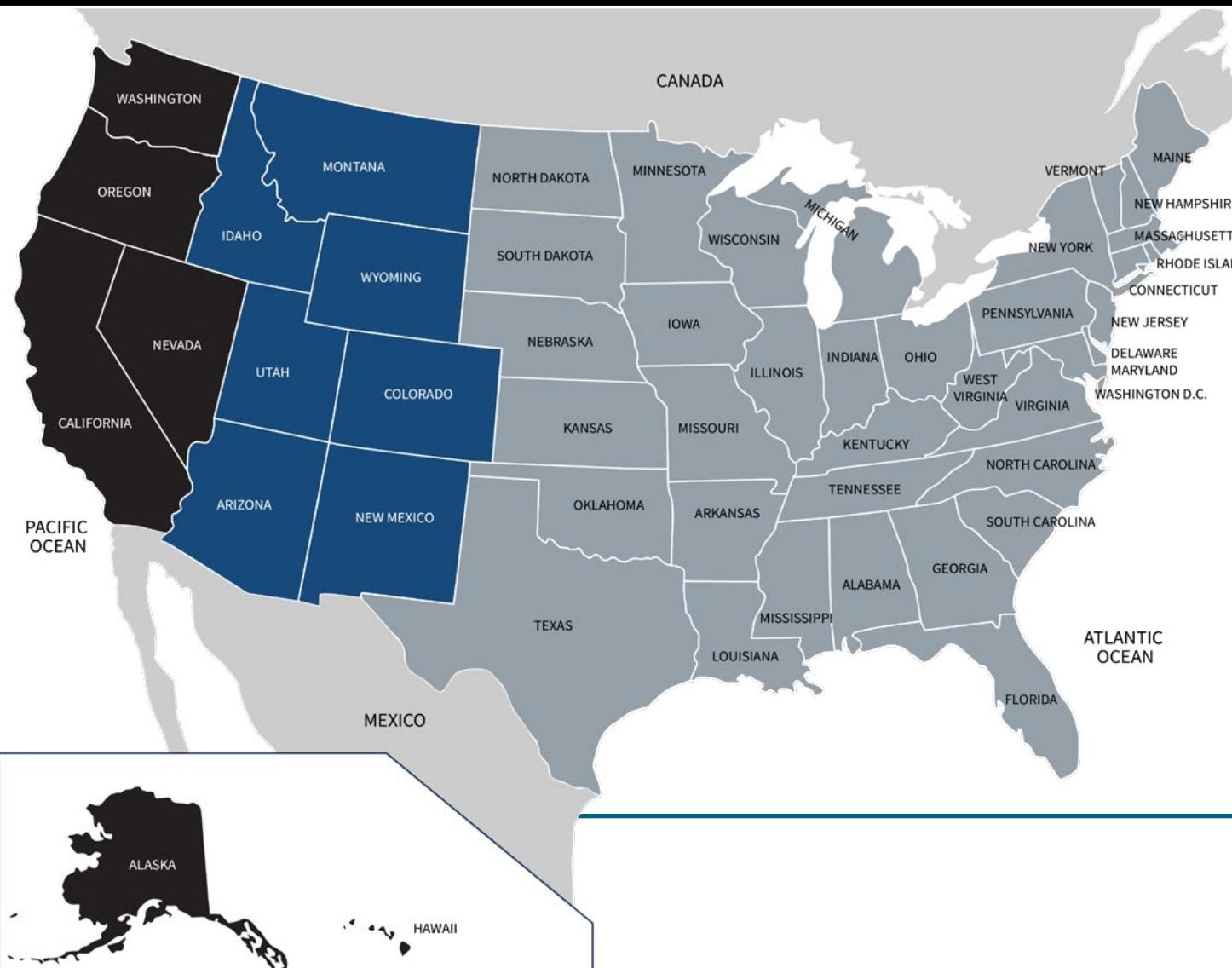


## THREADED ROD INSULATOR

The PIM Shield Threaded Rod Insulator is a low PIM solution for mounting stainless steel or galvanized steel 3/8" threaded hardware to 0.75-inch diameter snap-in hanger mounting holes.

| Part Number | Description                                | Qty. Per Case |
|-------------|--|---------------|
| 901191-10   | PIM Shield Threaded Rod Insulator, Qty. 10 | 10            |
| 901191-50   | PIM Shield Threaded Rod Insulator, Qty. 50 | 10            |





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