



PREFORMED LINE PRODUCTS

Section 21 – Guards, Moldings & Markers

Table of Contents	Page
Tree Guards	21-2
Guy Markers.....	21-3
Fiber Optic Cable Marker	21-6
Pedestal Marker	21-6
Ground Wire Molding	21-7
BIRD-FLIGHT™ Diverter.....	21-8
SWAN-FLIGHT™ Diverter.....	21-10



Tree Guards

Tree Guards

PREFORMED™ Tree Guards are designed to protect bare conductors, fabric-covered or plastic-covered cables and fiber optic cables against mechanical abrasion caused by tree limbs or other obstructions. Tree Guards provide fast, easy application without disconnecting the wire. Tree guards are applied around the wire, and taped at each end. High-impact polyethylene has strong abrasion resistance, strong weathering endurance, and high dielectric properties.



Catalog Number	Diameter Range		Units Per Carton	Wt./Lbs. Per Carton
	Min.	Max.		
Tree Guards 6 Ft. (1.8 m) Length				
PTG-0201	.238"	.500"	150	46
PTG-0203	.501"	1.00"	60	39
PTG-0205	1.01"	1.50"	25	25
PTG-0207	1.51"	2.00"	20	26
PTG-0208	2.01"	3.00"	12	25
Tree Guards 8 In. (203 mm) Length				
PTG-0200	.238"	.500"	1,000	35
PTG-0202	.501"	1.00"	500	34
PTG-0204	1.01"	1.50"	250	30
PTG-0206	1.51"	2.00"	175	25

These guards are polyethylene, and are black in color.

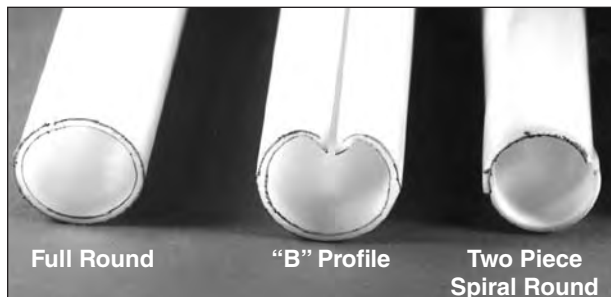
Catalog Number	Diameter Range		Length	Wall Thickness	Units Per Carton	Wt./Lbs. Per Carton
	Min.	Max.				
Tree Guards 6 Ft. Length						
PTG-0104	.267"	.297"	6'	1/16"	100	26
PTG-0107	.296"	.328"	6'	1/16"	100	28
PTG-0113	.359"	.389"	6'	1/16"	100	32
PTG-0116	.390"	.421"	6'	1/16"	100	34
PTG-0122	.454"	.478"	6'	1/16"	75	30
PTG-0125	.479"	.511"	6'	1/16"	75	32
PTG-0128	.512"	.542"	6'	1/16"	75	32
PTG-0137	.599"	.641"	6'	5/64"	75	48
PTG-0140	.642"	.706"	6'	5/64"	75	52
PTG-0143	.707"	.762"	6'	3/32"	50	46
PTG-0146	.763"	.820"	6'	3/32"	50	48
PTG-0149	.821"	.882"	6'	3/32"	50	52
PTG-0152	.883"	.947"	6'	3/32"	50	56
PTG-0155	.948"	1.010"	6'	3/32"	50	58
Tree Guards 3 Ft. Length						
PTG-0118	.422"	.453"	3'	1/16"	100	20
PTG-0121	.454"	.478"	3'	1/16"	100	20
PTG-0130	.543"	.568"	3'	5/64"	100	30
PTG-0139	.642"	.706"	3'	5/64"	100	34
PTG-0142	.707"	.762"	3'	3/32"	100	46
PTG-0154	.948"	1.010"	3'	3/32"	100	58

These guards are PVC and are gray in color.

Guy Markers

Guy Markers

PREFORMED™ Guy Markers are used for identifying Down Guys or other wire and cable installations where anchoring devices are exposed to pedestrian and/or vehicular traffic.



Profile Options

PREFORMED™ Guy Markers are available in three basic profiles:

- Full Round – 1½" and 1¼" OD (Outer Diameter)
- "B" Profile "heart shape" – 1½" effective OD
- Two Piece Spiral Round – 1½" OD, helically slit to create two halves

Material

Guy Markers are available in PVC and Polyethylene materials as shown in tables. All materials employ UV inhibitors to enhance life span performance.

Color

Guy Markers are available in yellow, gray, and orange. For other available colors and combinations of colors consult PLP for availability. Reflective tape is available as an option. If desired configuration is not shown in catalog tables, contact PLP for availability.

Attachment Devices

PREFORMED™ Guy Markers utilize 5 basic attachment devices. These are:

- Cable Tie
- LOOP-LOCK® Pin
- Integral Helical Pigtail (used in conjunction with Short Lock Strap)
- Mounted Cable Tie
- Plastic Clamp (see next page)

Cable Tie

Supplied as an alternate to the LOOP-LOCK® Pin. Helps deter vandalism.



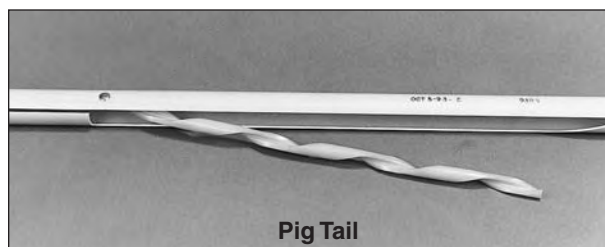
Cable Tie Attachment

LOOP-LOCK® Pin

A unique, one-way method that applies through the marker's tube and loop of a Guy-Grip dead-end. Once applied, the tube is locked onto the dead-end and cannot be removed easily by vandals. Removal and reinstallation of the marker by authorized personnel is possible with a new pin, which can be supplied separately.



LOOP-LOCK® Pin



Pig Tail

Integral Pigtail

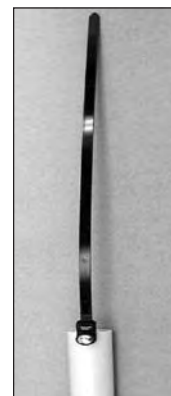
Attaches to the inside of the marker tube and wraps on to secure it to the strand. Generally fits a strand range of 3/16" – 1/2" diameters and provides a unique one-way slip down motion for ease of installation. The installed pigtail resists upward movement. The pigtail is made from specially formulated plastic designed to provide high strength, tear resistance and no corrosion.

Lock Strap Mounted Cable Tie

The short lock strap is primarily used with the pigtail device and helps deter vandalism. The long lock strap is used on dead-end devices that restrict the use of the LOOP-LOCK® Pin.



Short Lock Strap



Mounted Head Cable Tie



Guy Markers

Attachment Devices Continued.



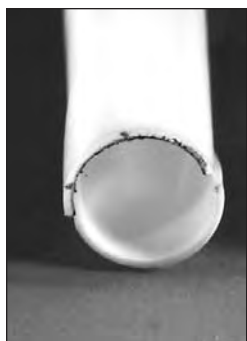
Note: Photo shows marker cut away to show clamp

Plastic Clamp

This innovative plastic clamp is completely internal to the marker tube. The clamp is held in place and tightened by the same bolt which is roughly 32" from the top of the Guy Marker. The Clamp provides a positive locking attachment to the strand without strand damage making it difficult for vandals to remove.

Currently supplied on the PG-5800 and PG-5810.

For alternate attachment devices on any profile, availability of different tube sizes, or tube lengths other than eight (8) feet, contact Preformed Line Products.



Two Piece
Spiral Round



Two Piece Spiral Round Markers

Designed to provide increased visibility for many guying or cable applications, the two piece spiral round markers can provide coverage from the ground line, around fittings and above normal reach depending upon installation.

The addition of a third helical section can provide up to 360° coverage for diameters over 1". This method may require special application techniques as outlined in the application procedure.

Limited coverage is possible for diameters over 1 $\frac{5}{8}$ " or over large, non-circular fittings. Consult the application procedure for special techniques.

Catalog Number	Length Feet	Color	Material	Tube OD Inches	Attachment Type	Carton Information	
						Units	Wt./Lbs.
PG-5750	8	Orange/Yellow	Poly	1 $\frac{1}{4}$	2-CT	25	30
PG-5752	8	Orange	Poly	1 $\frac{1}{4}$	2-CT	25	30

Guy Markers

Standard Guy Markers



Full Round



"B" Profile

Attachment Devices

PT	Helical Pigtail
SLS	Short Lock Strap – used in conjunction with the Helical Pigtail
MCT	Mounted Cable Tie
LLP	LOOP-LOCK™ Pin
CT	Cable Tie
CMP	Plastic Clamp

Catalog Number	Length	Color	Material	Tube Profile	Tube OD	Attachment Type	Carton Information	
							Units	Wt./Lbs.
PG-5414	8'	Yellow	Poly	Round	1¼"	LLP	25	32
PG-5411	8'	Gray	Poly	Round	1¼"	LLP	25	32
PG-MS-4988	8'	Yellow	Poly	Round	1¼"	None	25	26
PG-MS-3830	8'	Orange	Poly	Round	1¼"	None	25	32
PG-MS-9838	8'	Yellow	Poly	Round	1¼"	MCT	25	32
PG-5800	8'	Yellow	Poly	Round	1½"	CMP	25	34
PG-5810	8'	Orange	Poly	Round	1½"	CMP	25	34
PG-5718	8'	Yellow	Poly	Round	1½"	PT/SLS	25	27
PG-5718-P	8'	Yellow	Poly	"B"	1½"	PT/CT	25	35
PG-5518	8'	Yellow	PVC	Round	1½"	PT/SLS	25	33
PG-MS-3921	8'	Yellow	Poly	Round	1½"	MCT	25	33
PG-MS-4072	8'	Yellow	Poly	"B"	1½"	MCT	25	35
PG-5405	8'	Yellow	Poly	Round	1½"	LLP	25	36
PG-5423	8'	Yellow	Poly	"B"	1½"	LLP	25	36
PG-5462	8'	Yellow	Poly	"B"	1½"	2 LLP	25	33
RPG-5618	8'	Yellow/ Reflective Tape	PVC	Round	1½"	PT/SLS	25	33
RPG- MS-10469	8'	Yellow/ Reflective Tape	Poly	"B"	1½"	LLP	25	36
PG-5738	8'	Orange	Poly	Round	1½"	PT/SLS	25	27
PG-5708	8'	Gray	Poly	Round	1½"	PT/SLS	25	27
PG-5708-P	8'	Gray	Poly	"B"	1½"	PT/CT	25	36
PG-MS-7578	8'	Yellow	Poly	Round	2"	PT/SLS	25	49

Note: For different lengths, attachments and/or the addition of reflective tape, contact your PLP representative or Preformed Line Products.



Fiber Optic Cable Marker/Pedestal Marker

Fiber Optic Cable Marker

The Fiber Optic Cable Marker is designed to visibly identify Fiber Optic cable location on a wood utility pole. The identification can be determined from the ground due to the marker's bright orange color.

The Fiber Optic Cable Marker is manufactured from a corrosion resistant, lightweight polyethylene. Polyethylene provides superior retention of physical characteristics over temperature ranges and exposure to ultraviolet radiation.



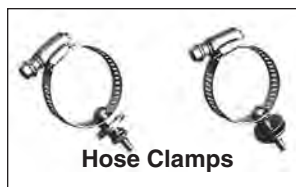
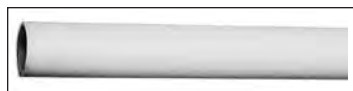
Catalog Number	Color	Tube ID	Length	Per Carton	
				Units	Wt./Lbs.
5005500	Orange	.86"	8"	450	34

Standard Fiber Optic Cable Marker is imprinted with the following information: FIBER OPTIC CATV. The characters are printed in black lettering that is $\frac{5}{16}$ " high and located opposite the installation slit. Custom printing and alternate colors are available. Contact Preformed Line Products for price and availability.

Pedestal Marker

Pedestal Markers are designed to identify and protect pedestals in deep snow by alerting highway snow removal crews of pedestal position.

Made from high impact polyethylene, Pedestal Markers are available in various lengths and in a highly visible yellow color. Each Pedestal Marker comes with two hose clamps and can be applied to the pedestal quickly, easily, and with standard tools.



Hose Clamps

Catalog Number	Length	Color	Per Carton	
			Units	Wt./Lbs.
PM-6114	4'	Yellow	20	13
PM-6115	5'	Yellow	20	16
PM-6116	6'	Yellow	20	19
PM-6117	7'	Yellow	20	22
PM-6118	8'	Yellow	20	25



Ground Wire Molding

Ground Wire Molding

Ground Wire Molding is designed to protect and cover surface-mounted cable, wire, or conductor on wood poles, etc. The soft grey color blends naturally in industrial or urban settings.

Ground Wire Molding is made from lightweight polyethylene and is available in standard 8 ft. lengths of various diameters. It is corrosion resistant and retains good physical characteristics over wide temperature ranges. Application with standard tools i.e., hammer and staples.

Catalog Number	Length	Color	Diameter	Per Carton	
				Units	Wt./Lbs.
GWM-7100	8'	Grey	1/2"	125	51
GWM-7101	8'	Grey	3/4"	100	60
GWM-7102	8'	Grey	1"	50	50
GWM-7200	8'	Black	1/2"	125	51
GWM-7201	8'	Black	3/4"	100	60
GWM-7202	8'	Black	1"	50	50

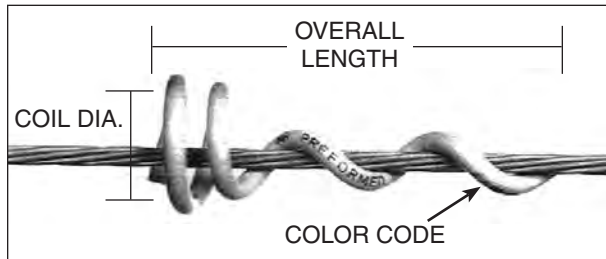




BIRD-FLIGHT™ Diverter

NOMENCLATURE

PLASTIC BIRD FLIGHT DIVERTER



Length: Distance product covers the conductor.

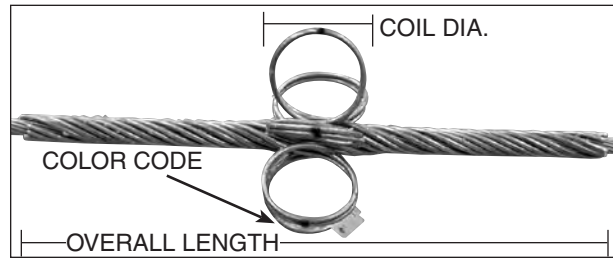
Color Code: Identifies conductor range, corresponding to tabular information on the following page.

Color: Yellow or Gray

Material: Outdoor grade PVC

Coil Diameter: Internal diameter of diverter coil

ALUMINUM BIRD FLIGHT DIVERTER



Length: Distance product covers the conductor.

Color Code: Identifies conductor range, corresponding to tabular information on the following page.

Color: Silver

Material: Aluminum Alloy

Coil Diameter: Approximately 4"

GENERAL RECOMMENDATIONS

The BIRD-FLIGHT Diverter is designed to make overhead lines and guyed structures visible to birds and provides an economical means of reducing the hazard to both lines and birds. For low and medium voltage construction, the BIRD-FLIGHT Diverter is applied to the phase conductors (bare or jacketed). For high voltages, it is used on the shield wire.

The BIRD-FLIGHT Diverter is lightweight, offers little wind resistance and is easily and quickly applied by hand or by hot stick. The positive grip on the conductor ensures that the Bird-Flight Diverter remains in the applied position and cannot move along the span under aeolian vibration or other conditions.

Visibility:

The diverter section increases the visible profile of the cable or conductor to a degree necessary to ensure safety, but avoids an undesirably bulky outline.

Materials:

The plastic BFD is manufactured from rigid .375" and .500" high impact polyvinyl chloride (PVC) possessing excellent chemical resistance and tensile strength properties. The BIRD-FLIGHT Diverter will retain good physical characteristics within a range of extreme temperatures. Aging tests confirm the material does not deteriorate in function or appearance from the effects of severe weather conditions. Industrial fumes and salt water cannot seriously degrade the properties of rigid PVC.

The Aluminum BFD is manufactured from a high strength, corrosive resistant aluminum alloy material. It is ideal for use on conductors operated at elevated temperatures.

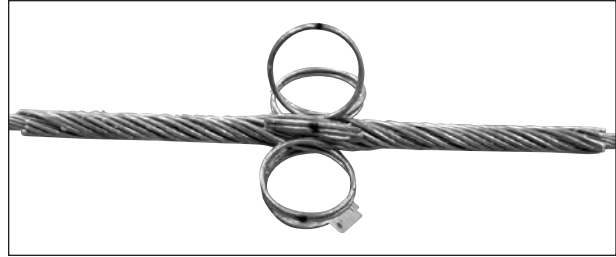
APPLICATIONS

Ensure the correct size BIRD-FLIGHT Diverter is used. For a detailed installation description, refer to the application instructions. Hot stick application is fast and simple with standard equipment.

Spacing:

For optimum results, spacing distances are generally recommended at 15' intervals depending upon local conditions. Since wind resistance is very limited, sufficient BIRD-FLIGHT Diverter can be used to ensure adequate visibility without creating stresses on the line. When marking adjacent spans, overall visibility is improved by staggering the application.

BIRD-FLIGHT™ Diverter



For use on:
Bare and Jacketed Conductors & Strand

Catalog Number	Material Color	Conductor Range (Inches)		Overall Length (Inches)	Diameter of Diverter Coil (Inches)	Diameter of PVC Rod (Inches)	Color Code
		Min	Max				
BFD-MS-3331	Yellow	0.175	0.249	7.00	2.25	0.375	Black
BFD-MS-3346	Gray						
BFD-MS-3155	Yellow	0.250	0.349	8.50	2.50	0.375	Blue
BFD-MS-2921	Gray						
BFD-MS-3164	Yellow	0.350	0.449	9.50	2.75	0.375	Brown
BFD-MS-3355	Gray						
BFD-MS-10022	Black						
BFD-MS-11135	Yellow			12.375	4.50	0.500	
BFD-MS-11060	Gray						
BFD-MS-11134	Black						
BFD-MS-3341	Yellow	0.450	0.599	11.00	3.00	0.375	Green
BFD-MS-3366	Gray						
BFD-MS-10023	Black						
BFD-MS-3344	Yellow	0.600	0.770	13.00	3.75	0.500	Purple
BFD-MS-3371	Gray						
BFD-MS-3345	Yellow	0.771	0.858	15.00	4.25	0.500	Red
BFD-MS-3376	Gray						
BFD-MS-3405	Yellow	0.859	0.942	16.50	4.75	0.500	Orange
BFD-MS-11699	Gray						
BFD-MS-11111	Yellow	0.971	1.121	15.50	4.25	0.438	Pink
BFD-MS-12290	Gray						
BFD-MS-10277	Black						
BFD-MS-11430	Yellow	1.122	1.306	16.25	4.38	0.438	Gray
BFD-MS-11110	Yellow	1.307	1.530	17.00	4.70	0.438	Black
BFD-MS-12351	Yellow	1.531	1.786	20.00	4.88	0.438	White
BFD-MS-11566	Yellow	1.787	2.100	23.00	5.25	0.438	Purple
BFD-MS-12603	Yellow	2.101	2.500	26.00	5.25	0.438	Orange
BFD-MS-11543	Aluminum	0.800	0.850	26.00	4.00	0.250	Pink
BFD-MS-12679	Aluminum	1.100	1.150	37.00	4.00	0.250	Purple
BFD-MS-12645	Aluminum	1.300	1.350	43.00	4.00	0.250	Red
BFD-MS-12687	Aluminum	1.565	1.635	54.00	4.00	0.250	Black

Explanatory Notes:

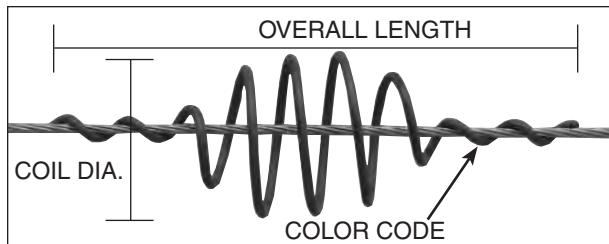
For field study results, consult Preformed Line Products.



SWAN-FLIGHT™ Diverter

NOMENCLATURE

PLASTIC SWAN-FLIGHT DIVERTER



Length: Distance product covers the conductor.

Color Code: Identifies conductor range, corresponding to tabular information on the following page.

Color: Yellow or Gray

Material: Outdoor grade High Impact PVC

Coil Diameter: Outside diameter of diverter coil

GENERAL RECOMMENDATIONS

The Preformed Line Products SWAN-FLIGHT Diverter is designed for use on conductor/strand to create greater visibility for avian flight paths on overhead lines and tower down guys. Offering little wind resistance, it reduces hazards to both lines and birds. For construction up to 230kV, the SWAN-FLIGHT Diverter can be applied to phase conductors (bare or jacketed). For EHV voltages, it is typically installed on the shield wire.

The SWAN-FLIGHT Diverter is lightweight, offers little wind resistance and is easily and quickly applied by hand or hot stick. The positive grip on the conductor ensures that the SWAN-FLIGHT Diverter remains in the applied location and cannot move along the span under Aeolian vibration or other conditions.

Visibility:

The diverter section increases the visible profile of the cable or conductor to a degree necessary to ensure safety, but avoids an undesirably bulky outline.

Materials:

The SWAN-FLIGHT Diverter (SFD) is manufactured from rigid .375" and .500" high impact polyvinyl chloride (PVC) possessing excellent chemical resistance and tensile strength properties. The SFD will retain good physical characteristics within range of extreme temperatures.

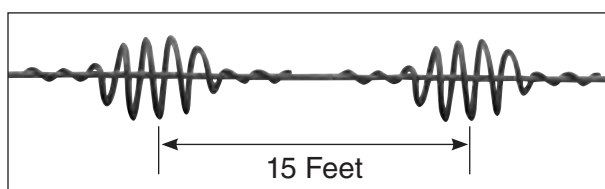
APPLICATIONS

Ensure the correct size SWAN-FLIGHT Diverter is used.

For detailed installation description, refer to the application procedure. Hot stick application is fast and simple with standard equipment.

Spacing:

For optimal results, spacing distances are generally recommended at 15' intervals depending upon local conditions. Since wind resistance is very limited, a sufficient quality of SWAN-FLIGHT Diversers can be used to ensure adequate visibility without creating stresses on the line. When marking adjacent spans, overall visibility is improved by the staggering application.



Catalog Number	Conductor Range (Inches)		Overall Length (Inches)	Diameter of Diverter Coil (Inches)	Diameter of PVC Rod (Inches)	Color Code
	Min	Max				
SFD-0445	0.175	0.249	20	7.0	0.375	Black
SFD-0635	0.250	0.349	23	7.0	0.375	Blue
SFD-0890	0.350	0.449	25	7.5	0.375	Brown
SFD-1140	0.450	0.599	35	8.0	0.375	Green
SFD-1520	0.600	0.770	38	8.0	0.500	Purple
SFD-1960	0.771	0.858	38	8.0	0.500	Red
SFD-2220	0.859	0.942	40	8.0	0.500	Orange
SFD-2460	0.943	1.121	40	8.0	0.500	Pink
SFD-2700	1.122	1.306	40	8.0	0.500	Gray
SFD-3035	1.307	1.530	46	8.0	0.500	Black

NOTE: Add suffix -Y to the catalog number for yellow color (i.e.: SFD-1140-Y).