



AMERISTAR®

DELTA FORCE®



TACTICAL OBSTACLES & ENTANGLEMENTS

HELICAL & CONCERTINA BARBED TAPE

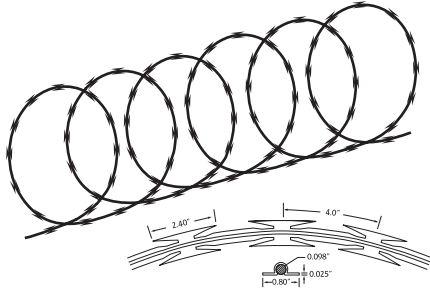
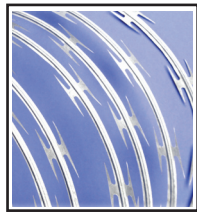
CIRCULAR & ELLIPTICAL COILS

Δ DELTA FORCE® Δ

PRODUCT SUMMARY

BTH • BARBED TAPE HELIX REINFORCED HELICAL LONG BARBS

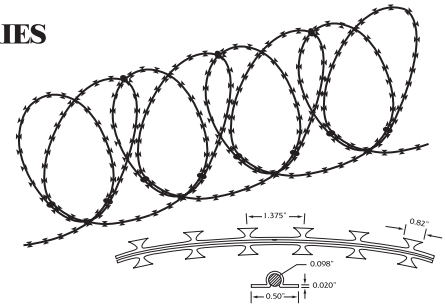
WHIPLASH®



WHIPLASH® BARBED TAPE HELIX is the entanglement system that is most recommended for commercial and industrial use. It is manufactured with long barbs and reinforced with high-tensile core wire. The helical loops of the **WHIPLASH®** system are not clipped together; therefore, it can be installed in a variety of loop spacing options, depending upon the level of security that may be required. Ameristar® offers **WHIPLASH®** in 18", 24", or 30" diameters.

BTC • BARBED TAPE COIL FLANGELESS CONCERTINA MEDIUM BARBS

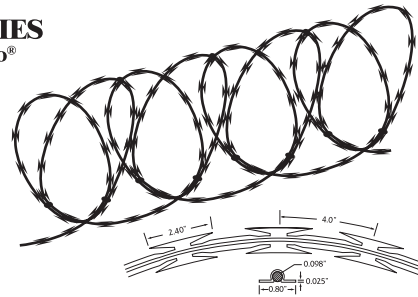
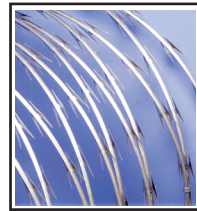
ReCOIL® SERIES ALPHA® • BRAVO®



The **ReCOIL®** Series of flangeless BARBED TAPE COILS with medium barbs was designed to address military specifications such as Commercial Item Description (CID) A-A-55522. **ReCOIL®** is available in both galvanized and stainless steel. Ameristar® offers the single concertina version, **ReCOIL ALPHA®**, in either 28" or 38" diameters, and the 28"/38" double concertina configuration, **ReCOIL BRAVO®**.

BTO • BARBED TAPE OBSTACLE REINFORCED CONCERTINA LONG BARBS

DEFCON® SERIES ALPHA® • BRAVO® • NIKO® VICTOR® • ZULU®



The **DEFCON®** Series (Defensive Configuration) of BARBED TAPE OBSTACLES offers a wide range of increasingly intense entanglements.

DEFCON ALPHA® is the original long-barb, wire-reinforced concertina. It is used mainly in minimum to medium security applications. It is manufactured with either long or offset barbs and is constructed with the same high quality reinforced cross-section as the higher security products. **DEFCON ALPHA®** is clipped at (3) three points about the circumference to produce a concertina with 16" maximum spacing (12" spacing in the 18" diameter). Ameristar® offers **DEFCON ALPHA®** in 18", 24", 30" and 36" diameters.

DEFCON BRAVO® provides a high degree of entanglement due to its inner and outer coils. The Army Corps of Engineers, and many prisons use this configuration. Constructed with the reinforced cross-section, the **DEFCON BRAVO®** has a 24" diameter coil inside a 30" diameter coil, each with (3) three clips about the circumference, for a total of (6) six clips. The (3) three clips allow a maximum opening of 16" spacing.









DEFCON NIKO® is designed for high maximum-security applications. This configuration is used for barriers in correctional facilities. **DEFCON NIKO®** is constructed with the reinforced cross-section and is clipped together in (5) five locations about the circumference. It is available in 51 loops or 81 loops with 12" spacing. Ameristar® offers **DEFCON NIKO®** in 30", 36" and 40" diameters.

DEFCON VICTOR® is a configuration also constructed with the reinforced cross-section and is clipped together in (7) seven locations about the circumference. It is available in 51 loops or 81 loops with 12" spacing. Ameristar® offers **DEFCON VICTOR®** in a 40" diameter.

DEFCON ZULU® is a configuration constructed with the reinforced cross-section and is clipped together in (9) nine locations about the circumference. It is available in 51 loops and 101 loops with 12" spacing. Ameristar offers **DEFCON ZULU®** in a 60" diameter.

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SELECTION GUIDE

BTH	WHIPLASH®	 Simple Helix Unclipped	ITEM NUMBER	DIAMETER	LOOPS	LOOP SPACING	LENGTH PER ROLL	WEIGHT PER ROLL	
			7555000020	18" (450 mm)	33	18" (450 mm)	50' (15 m)	11 lbs (5 kgs)	
			7555000050	24" (600 mm)	33	18" (450 mm)	50' (15 m)	17 lbs (7.7 kgs)	
			7555000080	30" (750 mm)	33	18" (450 mm)	50' (15 m)	22 lbs (10 kgs)	
Tape Strip: AISI 430 Stainless Steel (ASTM A 653 Galvanized Steel Also Available) • 1" Wide Prior To Forming Core Wire: AISI 301 Stainless Steel (ASTM A 764 Galvanized Steel Also Available) • .098" Diameter Barb Clusters: Long Barbs • 2.4" (± .10") Tip-To-Tip • 4" On Center ■ Loop Profile: Circular									
BTO	DEFCON ALPHA®	 Concertina 3 Clips Per Loop	ITEM NUMBER	DIAMETER	LOOPS	LOOP SPACING	LENGTH PER ROLL	WEIGHT PER ROLL	
			7555100010	18" (450 mm)	31	12" (300 mm)	15' (4.5 m)	11 lbs (5 kgs)	
			7555100040	24" (600 mm)	31	16" (400 mm)	20' (6 m)	17 lbs (7.7 kgs)	
			7555100070	30" (750 mm)	31	16" (400 mm)	20' (6 m)	22 lbs (10 kgs)	
				7555100100	36" (900 mm)	31	16" (400 mm)	20' (6 m)	25 lbs (11 kgs)
	DEFCON BRAVO®	 Double Concertina 3 Clips Per Loop Per Coil	7555100130	24" (600 mm) AND 30" (750 mm)	31 AND 31	16" (400 mm) AND 16" (400 mm)	20' (6 m)	39 lbs (18 kgs)	
			DEFCON NIKO®	 Concertina 5 Clips Per Loop	7555100170	30" (750 mm)	51	12" (300 mm)	25' (7.5 m)
	7555100190	30" (750 mm)			81	12" (300 mm)	40' (12 m)	52 lbs (24 kgs)	
	7555100210	36" (450 mm)			51	12" (300 mm)	25' (7.5 m)	37 lbs (17 kgs)	
	7555100230	36" (450 mm)			81	12" (300 mm)	40' (12 m)	59 lbs (27 kgs)	
	7555100250	40" (1000 mm)			51	12" (300 mm)	25' (7.5 m)	44 lbs (20 kgs)	
	7555100270	40" (1000 mm)			81	12" (300 mm)	40' (12 m)	68 lbs (31 kgs)	
	DEFCON VICTOR®	 Concertina 7 Clips Per Loop	7555100290	40" (1000 mm)	51	12" (300 mm)	25' (7.5 m)	44 lbs (20 kgs)	
			7555100310	40" (1000 mm)	81	12" (300 mm)	40' (12 m)	68 lbs (31 kgs)	
	DEFCON ZULU®	 Concertina 9 Clips Per Loop	7555100320	60" (1500 mm)	51	12" (300 mm)	25' (7.5 m)	65 lbs (30 kgs)	
			7555100340	60" (1500 mm)	101	12" (300 mm)	50' (15 m)	127 lbs (58 kgs)	
	Tape Strip: AISI 430 Stainless Steel (ASTM A 653 Galvanized Steel Also Available On Alpha® & Bravo®) • 1" Wide Prior To Forming Core Wire: Galvanized Or Stainless (ASTM A 764 Galvanized Standard On Alpha® & Bravo® / AISI 301 Stainless Standard On Niko®, Victor® & Zulu®) • .098" Diameter Barb Clusters: Long Barbs (Alternately Offset .15" - .45" Also Available) • 2.4" (± .10") Tip-To-Tip • 4" On Center ■ Loop Profile: Circular								
	BTC	RECOIL ALPHA®	 Concertina 5 Clips Per Loop	ITEM NUMBER	DIAMETER	LOOPS	LOOP SPACING	LENGTH PER ROLL	WEIGHT PER ROLL
				7555400010	28" (710 mm)	56	21" (535 mm)	50' (15 m)	23 lbs (10.5 kgs)
					7555400020	38" (965 mm)	56	21" (535 mm)	50' (15 m)
RECOIL BRAVO®		 Double Concertina 5 Clips Per Loop Per Coil	7555400030	28" (710 mm) AND 38" (965 mm)	56 AND 56	21" (535 mm) AND 21" (535 mm)	50' (15 m)	57 lbs (26 kgs)	
	Tape Strip: ASTM A 653 Galvanized Steel • .68" Wide Prior To Forming Core Wire: ASTM A 764 Galvanized Steel • .098" Diameter Barb Clusters: Medium Barbs • .82" (± .10") Tip-To-Tip • 1.375" On Center ■ Loop Profile: Circular								

NOTE: Upon request, selected Delta Force® products can be ordered with a larger or smaller quantity of loops per coil or with additional attachments per loop.

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TACTICAL FORMATIONS

Throughout history, various items and devices have been deployed as a tactic to discourage and repulse potential intruders and to obstruct, entangle, and frustrate committed attackers. Whether the devices used were the sharpened sticks and stones of the past or the dangerous barbed steel of the present, the arrangement for their deployment has closely paralleled logical military defensive strategies. Delta Force® barbed tape systems were designed to provide the most efficient use of material for maximum obstruction and entanglement effectiveness when deployed in continuous tactical formations such as the proven examples shown below.

WARNING: All the tactical formations shown can be used for correctional facilities, military operations and anti-terrorism deployments. DELTA FORCE® barbed tape obstacles are not meant to be used as ground barriers in commercial, light industrial, or other private applications. In such cases, a minimum installation height of 7 feet (2.13 meters) from ground level is recommended, and the entanglement system must be deployed in a manner that avoids any and all contact by non-intruding pedestrian traffic. It must also present an open, obvious and highly visible condition of danger. DELTA FORCE® barbed tape obstacles are not manufactured for use in any residential applications.

HOPLITE

The practice of armoring the vertical surface of a fence or wall with one or more long-barbed DELTA FORCE® reinforced concertina coils is patterned after the Greek *hoplite* defense, a continuous line of heavily armored foot soldiers standing in an upright position, extending sharp spears in the direction of oncoming adversaries. This formation prevents contact with the fence surface and discourages climbing attempts.

EXAMPLE:



PHALANX

A *phalanx* is formed by a shorter front line of one or more coils attached to a taller secondary line of coils supported by a fence or wall. The shorter coils make it difficult to cut an opening at the bottom of the fence; the taller line makes it a difficult climb. Varying the height of the coil stacks and the size and shape of the coil stacks can increase the effectiveness of the formation.

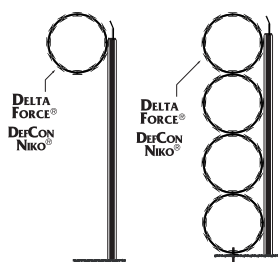
EXAMPLE:



STOCKADE

An upright structure topped by sharp spears or pikes and fronted by an obstacle system, either elevated near the top of the structure or stacked to cover the structure for its full height, forms a *stockade*. This formation can be extremely effective in conserving land space, and with sufficient height and frontal protection, it becomes an excellent deterrent to climbing.

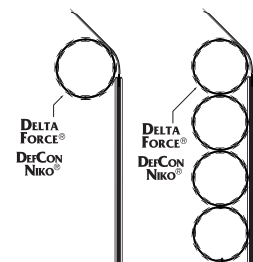
EXAMPLES:



PARAPET

The upright stockade formation can be modified by angling the top front of the structure sharply outward to face the attack side of the structure. This formation, called a *parapet*, is accomplished with extended barb arms in chain link or angled pales in ornamental security fences. The outward parapet will thwart efforts of even the best climbers.

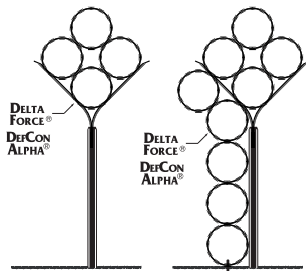
EXAMPLES:



DELTA

The *delta* ("vee"-shaped cradle) formed by the angular divergence of extended barb arms or pales, when filled with an entanglement system of stacked long-barbed coils, takes the parapet defense one step further by creating an elevated obstacle that is too wide to traverse and will not support ladders or other bridging devices.

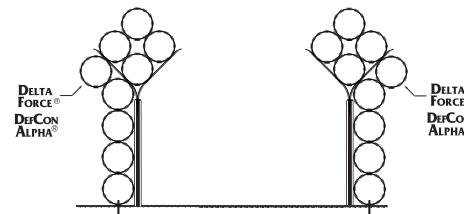
EXAMPLES:



CORDON

The *cordon* formation establishes a protected clear zone between two lines of parallel and oppositely-directed entanglements. Such a zone is typically used for patrolling or for transporting personnel, material, and supplies.

EXAMPLE:



COMBINATIONS & MULTIPLES

Any of the ground-level deployments, upright side-mounted systems, or elevated security formations discussed above can be combined to extend delay of attackers attempting to breach the perimeter. These "hybrid" formations can also be tailored toward the most probable types of anticipated attacks such as climbing, cutting, wedging, dismantling, etc. If space permits and security levels necessitate more obstruction or delay than can be provided by a single line, multiple lines can be formed. In such cases, it is recommended that multiple interior lines differ from the perimeter formation, forcing attackers to change tactics and tools.

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MASTER SPECIFICATION

Note: To establish a specific product specification, the text contained within red parens () is to be amended as appropriate for the specific application. Entries should be made in accordance with the manufacturer's selection guide.

PART 1 - GENERAL

1.01 WORK INCLUDED

The contractor shall provide all labor, materials and appurtenances necessary for installation of the tactical barbed tape obstacle and entanglement system defined herein at (specify project site).

1.02 SYSTEM DESCRIPTION

Section 022 __ - Earthwork

Section 030 __ - Concrete

1.03 SYSTEM DESCRIPTION

The manufacturer shall supply a total barbed tape obstacle and entanglement system of Ameristar® Delta Force® design. The system shall include all components (i.e., coils and related accessories) required.

1.04 QUALITY ASSURANCE

The contractor shall provide laborers and supervisors who are thoroughly familiar with the type of deployment involved and materials and techniques specified.

1.05 REFERENCES

- ASTM F 1910 - Standard Specification for Long Barbed Tape Obstacles.
- Military Commercial Item Description (CID) A-A-55522 - Barbed Tape, Concertina.

1.06 SUBMITTAL

The manufacturer's literature shall be submitted prior to installation.

1.07 PRODUCT HANDLING AND STORAGE

Upon receipt at the job site, all materials shall be checked to ensure that no damage occurred during shipping or handling. Materials shall be stored in such a manner to ensure proper ventilation and drainage, and to protect against damage, weather, vandalism and theft.

PART 2 - MATERIALS

2.01 MANUFACTURER

A. The tactical barbed tape entanglement system shall conform to Delta Force (specify Whiplash® style barbed tape helix - BTH, reinforced tape with long barbs, simple helical configuration, DefCon® style barbed tape obstacle - BTO, reinforced tape with long barbs, concertina configuration or ReCoil Alpha® style barbed tape coil - BTC, flangeless tape with medium barbs, concertina configuration) manufactured by Ameristar Fence Products, Inc., in Tulsa, Oklahoma.

B. The entire tactical entanglement system, and all associated accessories, shall be obtained from a single source.

2.02 MATERIALS

A. Barbed tape obstacle systems shall be designed to meet or exceed the requirements of (specify ASTM F 1910 for BTH, BTO, or CID A-A-55522 for BTC systems).

B. Steel strip material for tape shall be (specify applicable steel strip material criteria).

(For reinforced system including BTH, BTO, BTC, add following:)

C. Steel wire material for reinforcing core shall be (specify applicable steel wire material criteria).

2.03 FABRICATION

A. Prior to fabrication, tape material shall be (specify strip material width) wide by (specify strip material thickness) thick. It shall be punched to produce clusters of 4 barbs spaced (specify spacing of barb clusters) on center. Barbs shall be (specify flat or alternately offset .15" -.45") in profile with a minimum length of (specify barb length). (For reinforced BTH and BTO systems, add following:)

After punching, the tape shall be reinforced by permanently cold clenching it around a stainless core wire with a 0.098" diameter and 130,000 psi minimum tensile strength. The barbed tape strip shall have a minimum wrap of 230 degrees about the core wire. The finished reinforced tape shall be a minimum of 0.325" wide in the throat area and shall exhibit two cut-resistant flanges. These flanges shall taper off in the immediate vicinity of the barb clusters to allow maximum barb penetration.

(For reinforced BTC systems, add following:)

After punching, the tape shall be reinforced by permanently cold clenching it around a galvanized core wire with a 0.098" diameter and 220,000 psi minimum tensile strength. The finished reinforced barbed tape shall be without flanges between barbs and shall not disengage when a force of 100 pounds is applied.

B. Barbed tape coil loops shall be shaped with a (specify circular) profile and contain (specify the number of loops) loops, (specify diameter for circular coils) ± 1". Each loop shall contain (specify the number of barb clusters per loop) barb clusters ± 1.

(Note: For double coil systems, it will be necessary to specify the quantity, size and cluster count for both the inner and outer coils).

(For concertina BTO systems, add following:)

Reinforced barbed tape shall be converted to concertina configuration by clipping alternate adjacent loops at (specify number of attachment locations) places about the circumference, continuous along the entire length of the coil. Clips shall be .375" by .065" and mechanically closed to withstand a minimum pull load of 200 pounds.

(For concertina BTC systems, add following:)

Flangeless reinforced coils shall be converted to concertina configuration by clipping alternate adjacent loops at 5 places about the circumference, continuous along the entire length of the coil. Clips shall be .375" by .065" and mechanically closed to withstand a minimum pull load of 200 pounds.

C. The barbed tape system shall be designed to be spread to a loop spacing of (specify the spacing between loops), when fully deployed.

(For double coil BTO and BTC systems, add following:)

To ensure a uniform spacing for both inner and outer coils, they shall be fastened together by attaching a jacketed stainless steel wire rope, 7 by 7 strand, 3/64" by 5/64", at alternating loops throughout the double coil roll.

PART 3 - EXECUTION

3.01 PREPARATION

All new deployments shall be laid out by the contractor in accordance with the applicable project plans.

3.02 DEPLOYMENT

(For BTH and BTO systems, specify the following:)

The reinforced (specify BTH helical or BTO concertina) entanglement system is designed for use in a variety of permanent tactical deployment formations. Coils deployed in conjunction with standing fence systems or walls shall be firmly affixed using the fastening system specified in the manufacturer's instructions for the specific formation or combination of formations chosen. Each coil of barbed tape shall be extended a maximum of (specify coil length in feet) ± 1 foot. Adjacent coils shall be permanently spliced together by overlapping two barb clusters from each coil and splicing with steel tie wires placed around the shanks of the two coils between the barb clusters.

(For BTC systems, specify the following:)

The BTC flangeless reinforced concertina entanglement system is designed for use in a variety of permanent and temporary deployment tactical formations. Coils deployed in conjunction with standing fence systems or walls shall be firmly affixed using the fastening system specified in the manufacturer's instructions for the specific formation or combination of formations chosen. Coils running along ground surfaces shall have their free end pinned to the ground or tied to some other fixed point and then be spread until entirely deployed. Each coil of barbed tape shall be extended a maximum of 50' ± 1 foot. Adjacent coils shall be permanently spliced together by overlapping one cluster of each adjacent coil and splicing with two new steel tie wires placed around the shanks of the two coils between the barb clusters.

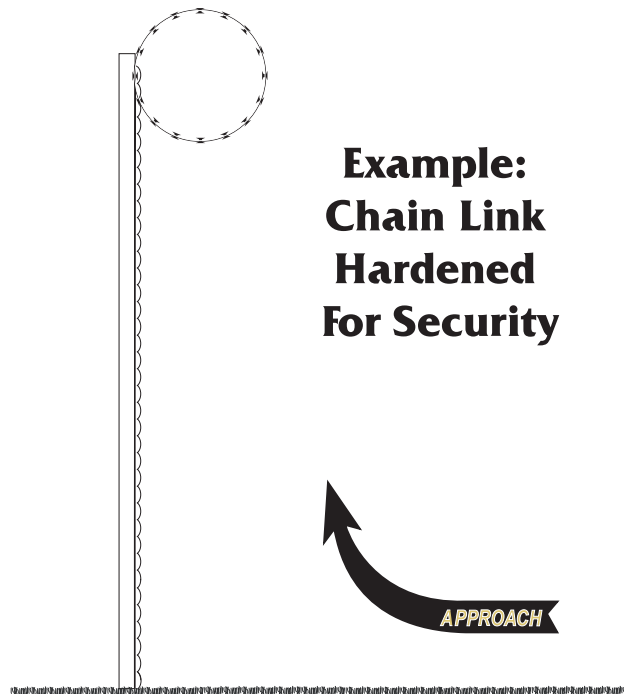
3.03 CLEANING

The contractor shall clear the deployment area of excess remnant materials upon completion of the deployment operation.

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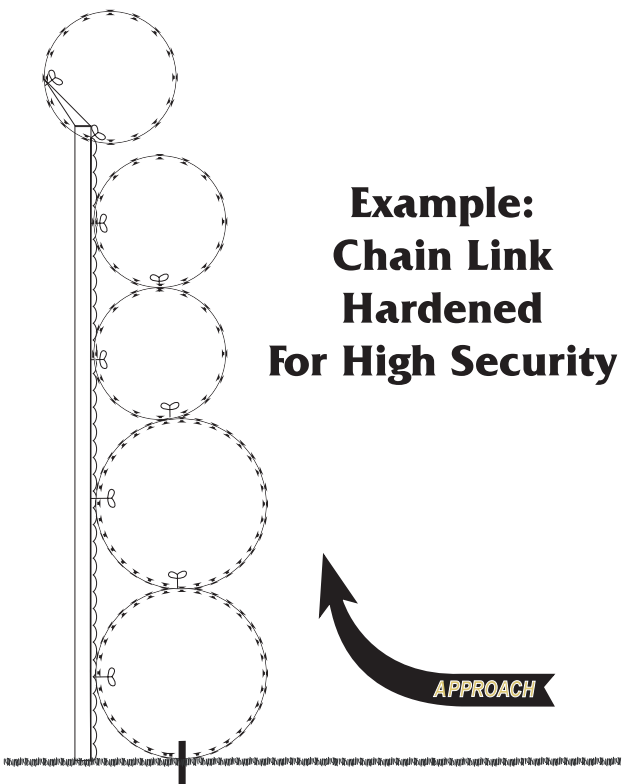
EXAMPLES

Install Along Top Of Chain Link Perimeter To Harden Against Climbing



**Example:
Chain Link
Hardened
For Security**

Stack Coils From Ground Up Along Side of Fence To Harden Against Cutting

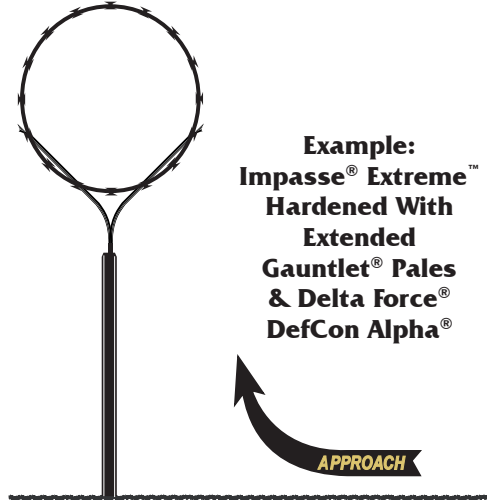


**Example:
Chain Link
Hardened
For High Security**

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EXAMPLES

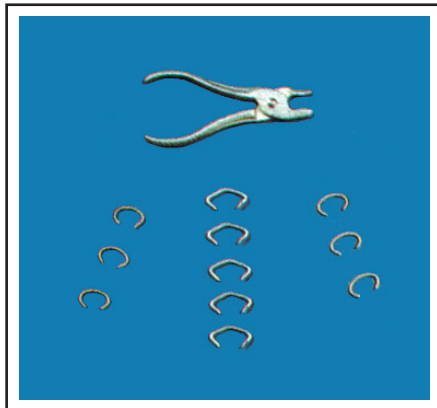
Enhance Impasse® Ornamental Pale Fence



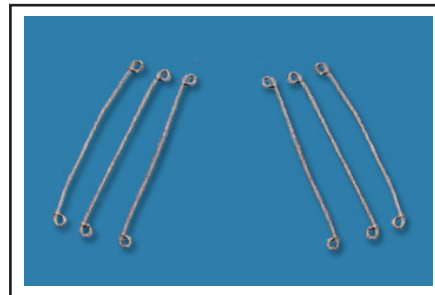
Example:
Impasse® Extreme™
Hardened With
Extended
Gauntlet® Pales
& Delta Force®
DefCon Alpha®

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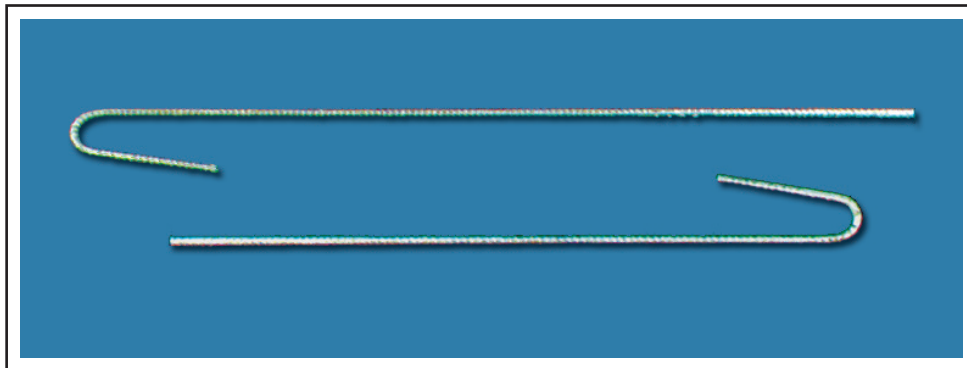
ACCESSORIES



Hog Rings
(12-1/2 Ga. Galvanized or Stainless)
& Hog Ring Pliers



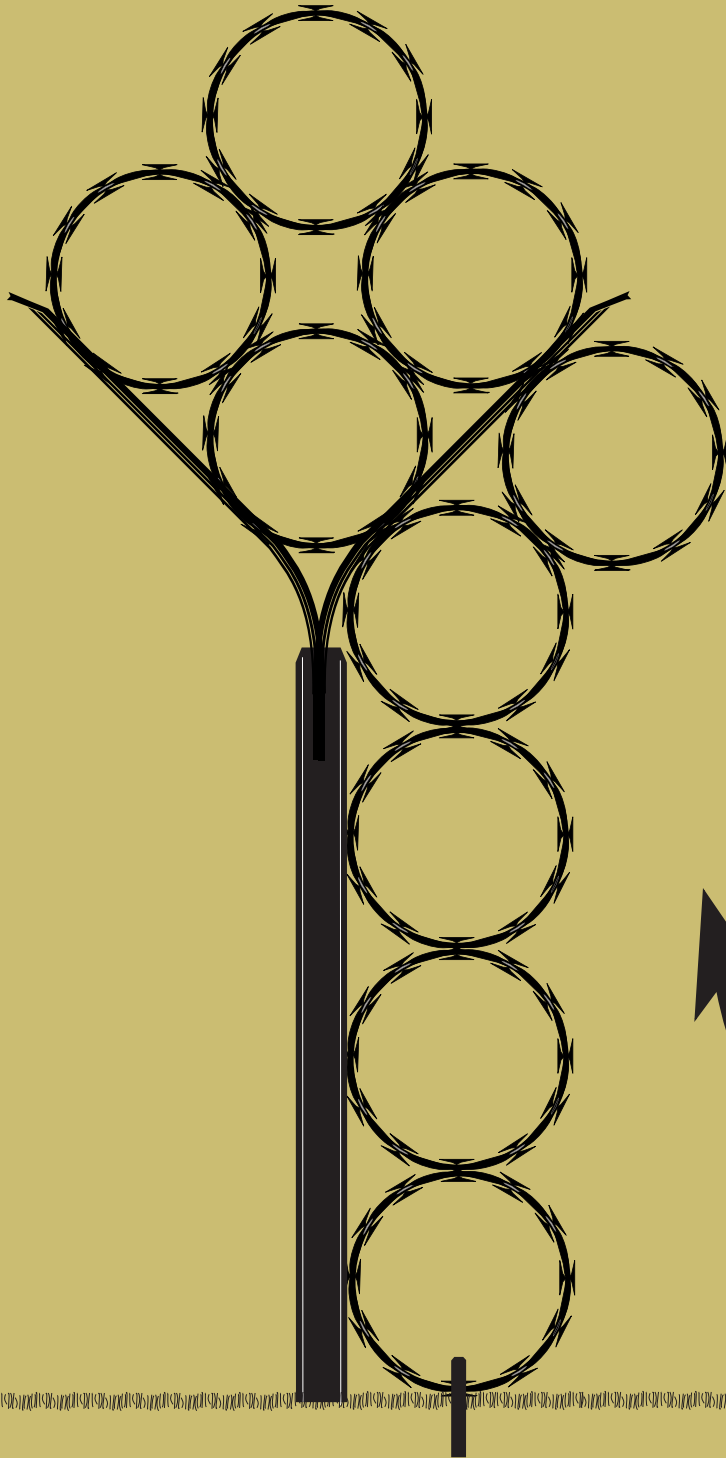
Tie Wires
(16 & 18 Ga. Galvanized or Stainless)



Ground Stakes
(Galvanized 3/8" Rebar)

NEW

DELTA FORCE®



**Example:
Impasse® Extreme™
Hardened With
Gauntlet® Pales
& Delta Force®
DefCon Alpha®**







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