

CATALOG



FENCE FRAMEWORK & PERIMETER SECURITY PRODUCTS

A BRAND OF



Fence Framework and Perimeter Security Products



Allied Tube & Conduit®, a brand of Atkore International, Inc. is the world's leading manufacturer of high strength security fencing products such as SS 40®, and POLYKOTE® polyester coated fence framework.

We innovated the In-Line Galvanizing process to provide product that delivers consistency, long-term strength, quality and reliability. Allied has been setting the industry standard for fence framework for over half a

century and continues to be the industry standard for fence framework.

Allied's fence framework is domestically manufactured to assure timely delivery.

RAZOR RIBBON® barbed tape products like INSTABARRIER®, DETAINER HOOK BARB®, and the HATBOX have been supplied to correctional facilities globally and are recognized as the industry standard in terms of both quality and design.

More professionals trust our High Strength Fence Framework and Perimeter Security Products than any other brand.



Allied's Flo-Coat® Process

■ STRENGTH □ CORROSION PROTECTION

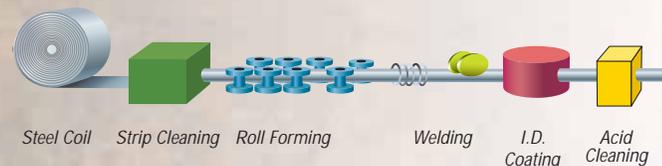


Table of Contents

Allied Tube & Conduit®

Fence Framework Products

• Introduction, Warranty, Codes, & Flo-Coat® Process	2-3
• SS40® Fence Framework Products	4-5
• SS30® Fence Framework Products	6-7
• SS20® Fence Framework Products	8-9
• SS15® Fence Framework Products	10-11
• Residential Pipe & Tube Products	12-13
• Square/Rectangular Products	14-15
• Polykote® Color Fence Framework Products	16-17

Allied Tube & Conduit®

Perimeter Security Products

• Introduction & Barbed Tape Styles	18-19
• Maze® Barbed Tape	19
• Supermaze® & Nato Barrier® Barbed Tape	20
• GPBTO Type II Barbed Tape	20
• Detainer Hook® Barbed Tape	21
• Instabarrier® Barbed Tape	21
• Razor Ribbon® Helical Barbed Tape	22
• Razor Strand® Barbed Tape	22
• BTC Barbed Tape Concertina	23
• Fence Pickets	23
• Hatbox RDU Unit	24
• Triple Strand RDU	25
• Accessories	26
• Razor Ribbon® Product Selector Guide	27

Warranty

Allied Tube & Conduit Corporation makes no warranties expressed or implied regarding the information contained herein, including without limitation, any warranty merchantability or fitness for a particular purpose. The specifications, descriptions, information and illustrated materials herein are submitted solely for evaluation purposes.

Allied Tube & Conduit Corporation assumes no obligation or liability for such information and does not guarantee results from the use of said products or the information herein. Reference should be made to the original or primary source data along with standard accepted industry practice. The material herein is as of the date of publication and is subject to change without notice.

For certification see contact information.
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Standards and Codes



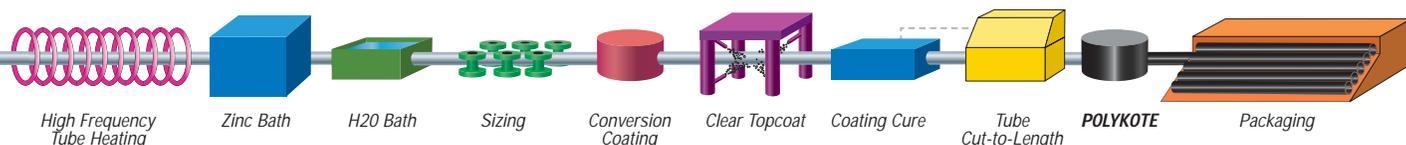
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POLYKOTE®



SS 40® – High Strength Fence Framework

For Heavy Commercial, Industrial and High Security Applications

Allied Tube & Conduit, with an engineering breakthrough in pipe manufacturing and corrosion resistant coating, has developed the most specified and the most requested framework in the fencing industry.

SS 40 is manufactured with cold-formed steel which provides a high yield strength, followed by a uniform triple layer of corrosion protection. Using Allied's patented Flo-Coat® process consisting of zinc, conversion coatings, and a clear organic top coat applied in-line. SS 40 is up to 37% stronger and as much as 21% lighter than Schedule 40 pipe .

The high yield strength 50,000 PSI steel and the triple coat of locked-in protection, results in pipe that not only out-performs Schedule 40 pipe in strength and corrosion resistance, but maintains its lustrous appearance in the most severe atmospheric conditions. SS 40 is clearly the industry leader.

Specifying Agencies

Agencies which have approved SS 40.

- (AASHTO) American Associations of State Highway and Transportation Officials M181-93
- Federal Specifications RR-F-191/3E (Chain Link Fence Posts, Top Rails and Braces)
- Unified Facilities Guide Specification for High Security (Department of Defense)
- Unified Facilities Guide Specification for Chain Link Fence (Department of Defense)
- Department of Transportation Federal Aviation Administration AC 150/5370-10A Item F-162
- U.S. Department of Justice - Federal Bureau of Prisons
- ASTM Specification F1043-10 Standard Specification for Strength and Protective Coatings Group IC

Certification

"Made in U.S.A." is proudly displayed on every length of SS 40 pipe. Allied will certify that all SS 40 fence pipe is manufactured in the USA and is in compliance with applicable Federal, State and local specifications, and the Unified Security Guide for High Security. Available in super long 38ft. lengths, and in Polykote Polyester color coats.



Allied SS 40 vs. Schedule 40

Type	Outside Dimensions (in.)	Pipe Wall Thickness (in.)	Weight (lbs./ft)	Section Modulus (inches ³)	Yield Strength (PSI)	Bending Moment (lbs. in.)	Bending Strength (lbs.)
							6' Cantilever Load
Posts							
1-7/8" O.D.	SS 40	1.900	.120	2.28	0.2810	50,000	14,050
1-7/8" O.D.	Sch 40	1.900	.145	2.72	0.3262	30,000	9,786
2-3/8" O.D.	SS 40	2.375	.130	3.12	0.4881	50,000	24,405
2-3/8" O.D.	Sch 40	2.375	.154	3.65	0.5606	30,000	16,818
2-7/8" O.D.	SS 40	2.875	.160	4.64	0.8778	50,000	43,890
2-7/8" O.D.	Sch 40	2.875	.203	5.79	1.0640	30,000	31,920
3-1/2" O.D.	SS 40	3.500	.160	5.71	1.3408	50,000	67,040
3-1/2" O.D.	Sch 40	3.500	.216	7.58	1.7241	30,000	51,723
4" O.D.	SS 40	4.000	.160	6.56	1.7819	50,000	89,095
4" O.D.	Sch 40	4.000	.226	9.11	2.3940	30,000	71,820
4-1/2" O.D.	SS 40	4.500	.160	7.42	2.2859	50,000	114,295
4-1/2" O.D.	Sch 40	4.500	.226	10.80	3.2145	30,000	96,435
							10' Free Supported
Top Rail							
1-3/8" O.D.	SS 40	1.315	.104	1.35	0.1110	50,000	5,556
1-3/8" O.D.	Sch 40	1.315	.133	1.68	0.1328	30,000	3,985
1-5/8" O.D.	SS 40	1.660	.111	1.84	0.1961	50,000	9,805
1-5/8" O.D.	Sch 40	1.660	.140	2.27	0.2350	30,000	7,050

SECTION 32 31 13

SS 40® – For Heavy Commercial, Industrial and High Security Applications for CHAIN-LINK FENCES AND GATES

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. Fence framework, fabric and accessories.
- B. Gates and related hardware.
- C. Installation

1.02 SCOPE OF WORK

- A. Summary: This section covers the work necessary to complete the chain link fence and gate installation.
- B. General: Like items of materials provided hereafter shall be the end-products of one manufacturer in order to achieve standardization for appearance, maintenance, and replacement. Major components including, but not limited to, Fence Framework and Chain-link Fabric shall be manufactured in the United States.
- C. Delivery, Storage, and Handling: Deliver material to the site in an undamaged condition. Carefully store material off the ground to provide proper protection against oxidation caused by ground moisture.

1.03 SUBMITTALS AND CERTIFICATION

- A. Shop Drawings: Include complete details of fence and gate construction, fence height, post spacing, dimensions, and unit weights of framework and concrete footing details.
- B. Product Data: Provide manufacturer's catalog cuts with printed specifications. Manufacturer shall provide certification of compliance with material specifications. Actual samples of the material may be requested.

PART 2 - PRODUCTS

2.01 MATERIAL

- A. Framework: SS 40 manufactured by Allied Tube & Conduit conforming to Standard Specification ASTM F1043, Group IC.
 - 1. High strength steel conforming to ASTM A1011
 - 2. O.D coating Type B and I.D. coating Type D.
 - 3. Polyester color coating if required per ASTM F1043 (POLYKOTE)
- B. Fabric Options: Fabric to be 9-gauge wire, woven in a 2" diamond mesh. Top selvage to be twisted and barbed, bottom selvage to be knuckled unless otherwise specified.
 - 1. Aluminized fabric shall be manufactured in accordance with ASTM A491 and coated before weaving with a minimum .40 ounces of aluminum per square foot of surface area. The steel wire and coating shall conform to ASTM30817.
 - 2. Zinc-coated fabric shall be galvanized before or after weaving in accordance with ASTM A392, Class 1 or Class 2.
 - 3. Color coated fabric to be per ASTM F668 Standard Specification for PVC and other Organic Polymer-Coated Steel Chain-Link Fence Fabric.

2.02 CONCRETE MIX

- A. Concrete: Conforming to ASTM C94, having a minimum compressive strength of 3,000 PSI at 28 days.

2.03 COMPONENTS

- A. Rails and Braces: 1-5/8" O.D.

- B. Gates: Per ASTM F 900
- C. Fittings, Tie Wires, and Hog Rings: Per ASTM F626
- D. Tension Wire: Per ASTM A824. (If required) Color coated to be per ASTM F1665.
- E. Barbed Wire: If required, commercial quality steel, 12-1/2 gauge, two strand twisted line wire with 4 point barbs at 5" spacing. Coating shall consist of a minimum of 0.80 ounces of zinc per square foot of wire surface conforming to ASTM A121 or a minimum of 0.30 ounces of aluminum per square foot of wire surface conforming to ASTM A585. Color coated to be per ASTM F1664.
- F. Barbed Tape: If required, options are available in ASTM F 1910 Table 1 and 2.

PART 3 - EXECUTION

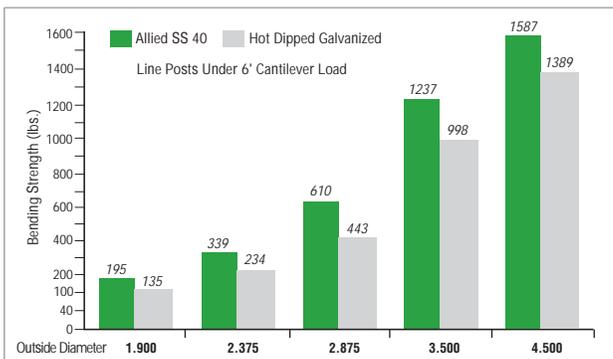
3.01 INSTALLATION

- A. General: Installation to conform to ASTM F567.
- B. Height: Provide height as indicated on contract drawings.
- C. Post Spacing: Space line posts at intervals not exceeding ten feet.
- D. Post Setting: Set terminal, gate and line posts plumb in concrete footings. Top of footing to be 2" above grade and sloped to direct water away from posts.
- E. Bracing: Brace Gate and terminal posts back to adjacent line posts with horizontal brace rails and diagonal truss rods.
- F. Top Rail: Install through line loop caps connecting sections with sleeves to form a continuous rail between terminal posts.
- G. Bottom / Middle Rail: Install between posts with line rail clamps or rail ends and bands.
- H. Fabric: Pull fabric taut with bottom selvage 2" above grade. Fasten to terminal posts with tension bars threaded through mesh and secured with tension bands at maximum 15" intervals. Tie to line posts and top rails with tie wires spaced at maximum 12" on posts and 24" on rails. Attach to bottom/top tension wire with hog rings at maximum 24" intervals.
- I. Barbed Wire: Anchor to terminal extension arms, pull taut, and firmly install in slots of line post extension arms.
- J. Gates: Install gates plumb, level and secure for full opening without interference. Anchor center stops and keepers in concrete.
- K. Fasteners: Install nuts for fittings, bands, and hardware bolts on inside of fence.
- L. Barbed Tape: Install in accordance with ASTM F1911. Consult with manufacturer for unique applications.

3.02 COMPLETION

- A. The area of installation shall be left free of debris caused by the installation of the fence End of Section.

SS 40 Strength Comparison



Bundle Counts for SS 40

Shape	O.D.	Bundle Qty.
Round	1.315	91
Round	1.660	61
Round	1.900	61
Round	2.375	37
Round	2.875	30
Round	3.500	19
Round	4.000	19
Round	4.500	19

SS 30[®] – High Strength Fence Framework

A domestic product designed for the Heavy Commercial and Industrial Market

SS 30 benefits from three decades of advancement in coating technology pioneered by SS 40[®]. Allied Tube's innovative application process provides the same level of Galvanization and zinc-rich interior in the same quality controlled manner. The result is a triple external coating consisting of 1.0 oz/ft² ± .1oz/ft² of zinc, a conversion coating of 30 micrograms/in² ± 15 micrograms/in², and a clear organic coating. The internal coating has a minimum of 90% by weight zinc powder loading capable of providing galvanic protection.

SS 30's strength and coatings exceed the provisions of ASTM F 1043, *Group IV Standard Specifications for Strength and Protective Coatings on Steel Industrial Chain Link Fence Framework*.

SS 30 is manufactured in the United States. It has greater strength and outperforms standard weight pipe in independent salt spray testing.

SS 30 continues the Allied Tube tradition of providing quality, service, and performance to the fence industry. Inspired by the high-strength performance of SS 40 and with the identical triple layer of corrosion protection, SS 30 has a bending moment exceeding that of Schedule 40 and meets the coating requirements of major federal and state agencies.

Available in super long 38ft. lengths, and in Polykote polyester color coats.

Allied Tube's SS 30 fence pipe is ready to fulfill its role as the quality domestic alternative to standard pipe.

- Perfect for the Commercial / Industrial Fencing Marketplace
- Stronger than Schedule 40
- Outperforms Schedule 40 in ASTM B 117 Salt Spray Tests
- Domestically Manufactured



Allied SS 30 vs. Schedule 40 Comparison Chart

Type	Outside Dimensions (in) (mm)	Pipe Wall Thickness (in) (mm)	Weight Galvanized (lbs / ft) (kg / m)	Section Modulus (inches ³)	Yield Strength (p.s.i.)	Bending Moment (lb. in.)	Bending Strength (lbs)			
POST O.D.							6' Cantilever			
1-7/8" O.D. SS 30	1.900"	48.30	.105"	2.66	2.01	2.99	0.2519	50,000	12,595	175
1-7/8" O.D. Sch 40	1.900"	48.30	.145"	3.68	2.72	4.05	0.3262	30,000	9,786	136
2-3/8" O.D. SS 30	2.375"	60.30	.115"	2.92	2.78	4.13	0.4402	50,000	22,006	306
2-3/8" O.D. Sch 40	2.375"	60.30	.154"	3.91	3.65	5.44	0.5606	30,000	16,818	234
2-7/8" O.D. SS 30	2.875"	73.00	.125"	3.18	3.66	5.44	0.7116	50,000	35,580	494
2-7/8" O.D. Sch 40	2.875"	73.00	.203"	5.16	5.79	8.62	1.064	30,000	31,920	443
3-1/2" O.D. SS 30	3.500"	88.90	.145"	3.68	5.20	7.74	1.231	50,000	61,550	855
3-1/2" O.D. Sch 40	3.500"	88.90	.216"	5.49	7.58	11.29	1.7241	30,000	51,723	718
4" O.D. SS 30	4.000"	101.60	.145"	3.68	5.98	8.90	1.6338	50,000	81,690	1134
4" O.D. Sch 40	4.000"	101.60	.226"	5.74	9.11	13.57	2.394	30,000	71,816	998
TOP RAIL										10' Free Supported
1-5/8" O.D. SS 30	1.660"	42.20	.095"	2.41	1.59	2.36	0.173	50,000	8,650	288
1-5/8" O.D. Sch 40	1.660"	42.20	.140"	3.56	2.27	3.38	0.235	30,000	7,050	235

SECTION 32 31 13

SS 30® – Heavy Commercial and Industrial Applications for CHAIN-LINK FENCES AND GATES

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. Fence framework, fabric and accessories.
- B. Gates and related hardware.
- C. Installation

1.02 SCOPE OF WORK

- A. Summary: This section covers the work necessary to complete the chain link fence and gate installation.
- B. General: Like items of materials provided hereafter shall be the end-products of one manufacturer in order to achieve standardization for appearance, maintenance, and replacement.
- C. Delivery, Storage, and Handling: Deliver material to the site in an undamaged condition. Carefully store material off the ground to provide proper protection against oxidation caused by ground moisture.

1.03 SUBMITTALS AND CERTIFICATION

- A. Shop Drawings: Include complete details of fence and gate construction, fence height, post spacing, dimensions, and unit weights of framework and concrete footing details.
- B. Product Data: Provide manufacturer's catalog cuts with printed specifications. Manufacturer shall provide certification of compliance with material specifications. Actual samples of the material may be requested.

PART 2 - PRODUCTS

2.01 MATERIAL

- A. Framework: SS 30 manufactured by Allied Tube & Conduit conforming to Standard Specification ASTM F1043, Group IV.
 - 1. High strength steel conforming to ASTM A1011
 - 2. O.D coating Type B and I.D. coating Type D.
 - 3. Polyester color coating if required per ASTM F1043 (POLYKOTE)
- B. Fabric Options: Fabric to be 9-gauge wire, woven in a 2" diamond mesh. Top selvage to be twisted and barbed, bottom selvage to be knuckled unless otherwise specified.
 - 1. Aluminized fabric shall be manufactured in accordance with ASTM A491 and coated before weaving with a minimum .40 ounces of aluminum per square foot of surface area. The steel wire and coating shall conform to ASTM 30817.
 - 2. Zinc-coated fabric shall be galvanized before or after weaving in accordance with ASTM A392, Class 1 or Class 2.
 - 3. Color coated fabric to be per ASTM F668 Standard Specification for PVC and other Organic Polymer-Coated Steel Chain-Link Fence Fabric.

2.02 CONCRETE MIX

- A. Concrete: Conforming to ASTM C94, having a minimum compressive strength of 3,000 PSI at 28 days.

2.03 COMPONENTS

- A. Rails and Braces: 1-5/8" O.D.

- B. Gates: Per ASTM F900
- C. Fittings, Tie Wires, and Hog Rings: Per ASTM F626
- D. Tension Wire: Per ASTM A824. (If required) Color coated to be per ASTM F1665.

PART 3 - EXECUTION

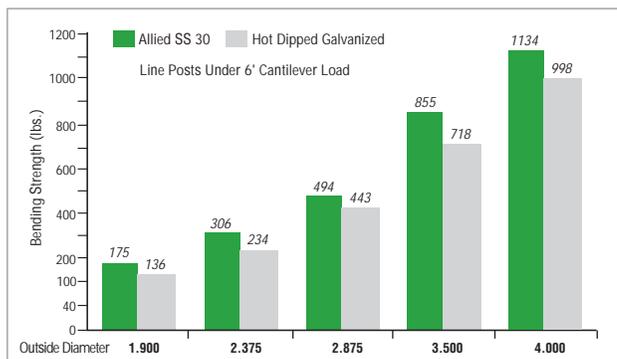
3.01 INSTALLATION

- A. General: Installation to conform to ASTM F567.
- B. Height: Provide height as indicated on contract drawings.
- C. Post Spacing: Space line posts at intervals not exceeding ten feet.
- D. Post Setting: Set terminal, gate and line posts plumb in concrete footings. Top of footing to be 2" above grade and sloped to direct water away from the posts.
- E. Bracing: Brace Gate and terminal posts back to adjacent line posts with horizontal brace rails and diagonal truss rods or as noted on construction drawings.
- F. Top Rail: Install through line loop caps connecting sections with sleeves to form a continuous rail between terminal posts.
- G. Bottom / Middle Rail: Install between posts with line rail clamps or rail ends and bands.
- H. Fabric: Pull fabric taut with bottom selvage 2" above grade. Fasten to terminal posts with tension bars threaded through mesh and secured with tension bands at maximum 15" intervals. Tie to line posts and top rails with tie wires spaced at maximum 12" on posts and 24" on rails. Attach to bottom/top tension wire with hog rings at maximum 24" intervals.
- I. Barbed Wire: Anchor to terminal extension arms, pull taut, and firmly install in slots of the line post extension arms.
- J. Gates: Install gates plumb, level and secure for full opening without interference. Anchor center stops and keepers in concrete.
- K. Fasteners: Install nuts for fittings, bands, and hardware bolts on inside of fence.
- L. Barbed Tape: Install in accordance with ASTM F1911. Consult with manufacturer for unique applications.

3.02 COMPLETION

- A. The area of installation shall be left free of debris caused by the installation of the fence.

SS 30 Strength Comparison



Bundle Counts for SS 30

Shape	O.D.	Bundle Qty.
Round	1.660	61
Round	1.900	61
Round	2.375	37
Round	2.875	30
Round	3.500	19
Round	4.000	19

SS 20[®] – High Strength Fence Framework

For Light Commercial and Industrial Applications

Allied's SS 20 was specifically designed and engineered for use in the industrial fence market. As the leading supplier of framework to the fence industry, Allied manufactures SS 20 with high yield strength steel, and with our unique in-line continuous, Flo-Coat[®] process. SS 20 out performs mill structural pipe both in strength and corrosion resistance. "Made in USA" is proudly displayed on every length of SS 20.

Superior Corrosion Resistance

Flo-Coat, a uniform application of zinc, conversion coating and a clear organic top coat gives SS 20 a superior exterior finish. This carefully monitored triple coating results in a smooth, lustrous and durable surface that provides lasting corrosion resistance in all climates.

Laboratory tests conducted per ASTM test methods show that SS 20's zinc-rich interior coating provides superior corrosion protection.

Exceptional Strength

SS 20 is fabricated from steel conforming to ASTM A 1011 and is cold-formed to a minimum of 50,000 PSI yield strength. The yield strength compared to hot-dipped galvanized structural pipe is up to 65% stronger, yet as much as 20% lighter.

This dispels the old philosophy that greater weight means greater strength.

Fabrication

SS 20 is the obvious choice for industrial and commercial gate framework as well as a variety of specialty applications.

Welding can be done without protective coatings crazing or flaking and there is less burn-back at the weldments. SS 20's lightweight and superior strength aid in reducing stress on gate accessories (hinges, slide gate rollers, automatic operators, etc.) SS 20's strength and coatings exceed the provisions of ASTM F 1043.

Group IC-L Standard Specifications for Strength and Protective Coatings on Steel Light Industrial Chain Link Fence Framework.

Available in 38ft. lengths, and Polykote polyester color coats.

Applications

With a proven performance record, SS 20 continues to be the pipe of choice which includes the following applications:

- Perimeter Security
- Parks / Playgrounds
- Parking Lots
- Industrial Gates
- Sports Facilities
- Partitions
- Tool Cribs
- Athletic Fields



Allied SS20 vs. Hot Dip Galvanized Comparison Chart

Type	Outside Dimensions (in.)	Pipe Wall Thickness (in.)	Weight (lbs./ft)	Section Modulus (inches ³)	Yield Strength (PSI)	Bending Moment (lbs. in.)	Bending Strength (lbs.)	
Posts							6' Cantilever	
1-7/8" O.D.	SS 20	1.900	.090	1.74	0.2212	50,000	11,060	154
1-7/8" O.D.	Structural	1.900	.116	2.21	0.2735	25,000	6,835	95
2-3/8" O.D.	SS 20	2.375	.095	2.32	0.3731	50,000	18,655	259
2-3/8" O.D.	Structural	2.375	.116	2.80	0.4434	25,000	11,085	154
2-7/8" O.D.	SS 20	2.875	.110	3.25	0.6364	50,000	31,820	442
2-7/8" O.D.	Structural	2.875	.128	3.76	0.7264	25,000	18,160	252
2-7/8" O.D.	SS 20	2.875	.110	3.25	0.6364	50,000	31,820	442
2-7/8" O.D.	Structural	2.875	.128	3.76	0.7264	25,000	18,160	252
3-1/2" O.D.	SS 20	3.500	.110	3.98	0.9627	50,000	48,133	669
3-1/2" O.D.	Structural	3.515	.128	4.61	1.1029	25,000	33,086	252
Top Rail							10' Free Supported	
1-3/8" O.D.	SS 20	1.315	.080	1.06	0.0904	50,000	4,519	151
1-3/8" O.D.	Structural	1.315	.116	1.49	1.2050	25,000	3,013	100
1-5/8" O.D.	SS 20	1.660	.085	1.43	0.1576	50,000	7,880	263
1-5/8" O.D.	Structural	1.660	.116	1.91	0.2032	25,000	5,079	169

SECTION 32 31 13

SS 20® – Light Commercial and Industrial Applications for CHAIN-LINK FENCES AND GATES

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. Fence framework, fabric and accessories.
- B. Gates and related hardware.
- C. Installation

1.02 SCOPE OF WORK

- A. Summary: This section covers the work necessary to complete the chain link fence and gate installation.
- B. General: Like items of materials provided hereafter shall be the end-products of one manufacturer in order to achieve standardization for appearance, maintenance, and replacement.
- C. Delivery, Storage, and Handling: Deliver material to the site in an undamaged condition. Carefully store material off the ground to provide proper protection against oxidation caused by ground moisture.

1.03 SUBMITTALS AND CERTIFICATION

- A. Shop Drawings: Include complete details of fence and gate construction, fence height, post spacing, dimensions, and unit weights of framework and concrete footing details.
- B. Product Data: Provide manufacturer's catalog cuts with printed specifications. Manufacturer shall provide certification of compliance with material specifications. Actual samples of the material may be requested.

PART 2 - PRODUCTS

2.01 MATERIAL

- A. Framework: SS 20 manufactured by Allied Tube & Conduit conforming to Standard Specification ASTM F1043, Group IC-L.
 - 1. High strength steel conforming to ASTM A1011
 - 2. O.D coating Type B and I.D. coating Type D..
 - 3. Polyester color coating if required per ASTM F1043 (POLYKOTE)
- B. Fabric Options: Fabric to be 9-gauge wire, woven in a 2" diamond mesh. Top selvage to be twisted and barbed, bottom selvage to be knuckled unless otherwise specified.
 - 1. Aluminized fabric shall be manufactured in accordance with ASTM A 491 and coated before weaving with a minimum .40 ounces of aluminum per square foot of surface area. The steel wire and coating shall conform to ASTM A817.
 - 2. Zinc-coated fabric shall be galvanized before or after weaving in accordance with ASTM A 392, Class 1 or Class 2.
 - 3. Color coated fabric to be per ASTM F668 Standard Specification for PVC and other Organic Polymer-Coated Steel Chain-Link Fence Fabric.

2.02 CONCRETE MIX

- A. Concrete: Conforming to ASTM C94, having a minimum compressive strength of 3,000 PSI at 28 days.

2.03 COMPONENTS

- A. Rails and Braces: 1-5/8" O.D.
- B. Gates: Per ASTM F900

- C. Fittings, Tie Wires, and Hog Rings: Per ASTM F626
- D. Tension Wire: Per ASTM A824. (If required) Color coated to be per ASTM F1665
- E. Barbed Wire: If required, commercial quality steel, 12-1/2 gauge, two strand Twisted line wire with 4 point barbs at 5 inch spacing. Coating shall consist of minimum of 0.80 ounces of zinc per square foot of wire surface conforming to ASTM A121 or a minimum of 0.30 ounces of aluminum per square foot of wire surface conforming to ASTM A585. Color coated to be per ASTM F1664.
- F. Barbed Tape: If required, options are available in ASTM F 1910 Table 1 and 2.

PART 3 - EXECUTION

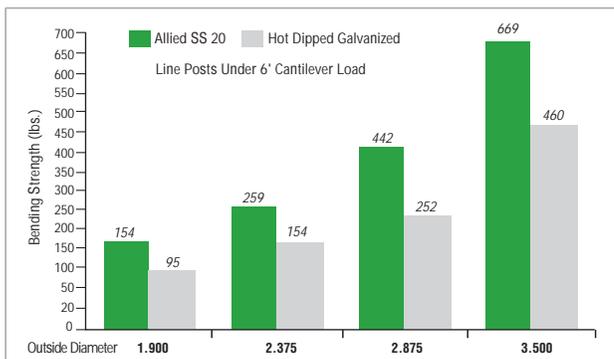
3.01 INSTALLATION

- A. General: Installation to conform to ASTM F567.
- B. Height: Provide height as indicated on contract drawings.
- C. Post Spacing: Space line posts at intervals not exceeding ten feet.
- D. Post Setting: Set terminal, gate and line posts plumb in concrete footings. Top of footing to be 2" above grade and sloped to direct water away from posts.
- E. Bracing: Brace Gate and terminal posts back to adjacent line posts with horizontal brace rails and diagonal truss rods.
- F. Top Rail: Install through line loop caps connecting sections with sleeves to form a continuous rail between terminal posts.
- G. Bottom / Middle Rail: Install between posts with line rail clamps or rail ends and bands.
- H. Fabric: Pull fabric taut with bottom selvage 2" above grade. Fasten to terminal posts with tension bars threaded through mesh and secured with tension bands at maximum 15" intervals. Tie to line posts and top rails with tie wires spaced at maximum 12" on posts and 24" on rails. Attach to bottom/top tension wire with hog rings at maximum 24" intervals.
- I. Barbed Wire: Anchor to terminal extension arms, pull taut, and firmly install in slots of line post extension arms.
- J. Gates: Install gates plumb, level and secure for full opening without interference. Anchor center stops and keepers in concrete.
- K. Fasteners: Install nuts for fittings, bands, and hardware bolts on inside of fence.
- L. Barbed Tape: Install in accordance with ASTM F1911. Consult with manufacturer for unique applications.

3.02 COMPLETION

- A. The area of installation shall be left free of debris caused by the installation of the fence.

SS 20 Strength Comparison



Performance SS 20

Strength	65% Stronger
Durability (Corrosion Resistance)	Superior Coatings
Appearance	Smooth, bright finish
Weight Savings	20% lighter
Weldability	Less Burnback
Ease of Fabrication	Coatings will not flake or craze
Value	The obvious choice

Bundle Counts for SS 20

Shape	O.D.	Bundle Qty.
Round	1.315	91
Round	1.660	61
Round	1.900	61
Round	2.375	37
Round	2.875	30
Round	3.500	19

SS 15[®] – High Strength Fence Framework

Domestically manufactured for Heavy Residential and Light Commercial Applications

Allied Tube & Conduit Corporation's SS 15 fence framework is superior in all ways to imported hot-dipped galvanized tubing and structural pipe!

Exceptional Strength

SS 15 is fabricated from steel conforming to ASTM A1011 and is cold-formed to a minimum of 50,000 PSI yield strength. The yield strength compared to hot-dipped galvanized .110 wall tubing is 40% stronger, yet as much as 35% lighter.

This dispels the old philosophy that greater weight means greater strength.

Superior Corrosion Resistance

Allied's continuous in-line Flo-Coat[®] process delivers a triple layer of corrosion protection that out-performs structural pipe in corrosion resistance. After welding, our high strength steel passes through a bath of molten high grade and special high grade zinc conforming to ASTM B6.

The zinc coating is followed by a conversion coating to further retard corrosion and then by a clear polymer film for even more collision protection.

Flo-Coat[®] results in a synergistic effect where the triple coating is superior to its individual parts.

- Domestically Manufactured
- Up to 40% stronger than .110 wall hot-dipped galvanized product
- Up to 33% lighter than .110 wall hot-dipped galvanized product
- Available in 38ft. lengths, and Polykote polyester color coats.
- Available with manufacturing locations in IL, PA, and AZ with distribution in all 50 states

Light Commercial Applications

- Parks and playgrounds
- Rental storage facilities
- Low security controlled access areas
- Boarding kennels
- Indoor security panels and partitions

Residential Applications

- Use with privacy slats for improved wind loading
- Areas of high snow and ice loads
- Large gates and gate posts
- Heavier than normal pedestrian traffic areas
- Guard dog enclosures



Allied SS15 vs. Hot Dip Galvanized Comparison Chart

Type	Outside Dimensions	Pipe Wall Thickness (in.)	Weight (lbs./ft.)	Section Modulus (inches ³)	Yield Strength (PSI)	Bending Moment (lbs. in.)	Bending Strength (lbs.)	Bending Strength (lbs.)
Posts							4' Cantilever	6' Cantilever
1-5/8" O.D.	SS 15	1.660	0.072	1.22	0.1367	50,000	6,835	142
1-5/8" O.D.	HDG	1.660	0.110	1.82	0.1948	25,000	4,870	101
1-7/8" O.D.	SS 15	1.900	0.072	1.41	0.1821	50,000	9,104	190
1-7/8" O.D.	HDG	1.900	0.110	2.10	0.2618	25,000	6,544	136
2-3/8" O.D.	SS 15	2.375	0.072	1.77	0.2911	50,000	14,556	303
2-3/8" O.D.	HDG	2.375	0.110	2.66	0.4237	25,000	10,592	221
Top Rail							10' Free Supported	
1-3/8" O.D.	SS 15	1.315	0.072	0.96	0.0829	50,000	4,143	138
1-3/8" O.D.	HDG	1.315	0.110	1.42	0.1159	25,000	2,898	97
1-5/8" O.D.	SS 15	1.660	0.072	1.22	0.1367	50,000	6,835	228
1-5/8" O.D.	HDG	1.660	0.110	1.82	0.1948	25,000	4,870	152

*HDG – Light Wall Hot Dipped Galvanized

SECTION 32 31 13

SS 15® – Heavy Residential and Light Commercial Applications for CHAIN-LINK FENCES AND GATES

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. Fence framework, fabric and accessories.
- B. Gates and related hardware.
- C. Installation

1.02 SCOPE OF WORK

- A. Summary: This section covers the work necessary to complete the chain link fence and gate installation.
- B. General: Like items of materials provided hereafter shall be the end-products of one manufacturer in order to achieve standardization for appearance, maintenance, and replacement.
- C. Delivery, Storage, and Handling: Deliver material to the site in an undamaged condition. Carefully store material off the ground to provide proper protection against oxidation caused by ground moisture.

1.03 SUBMITTALS AND CERTIFICATION

- A. Shop Drawings: Include complete details of fence and gate construction, fence height, post spacing, dimensions, and unit weights of framework and concrete footing details.
- B. Product Data: Provide manufacturer's catalog cuts with printed specifications. Manufacturer shall provide certification of compliance with material specifications. Actual samples of the material may be requested.

PART 2 - PRODUCTS

2.01 MATERIAL

- A. Framework: SS 15 manufactured by Allied Tube & Conduit with steel conforming to Standard Specification ASTM A1011 with a 50,000 PSI yield strength.
- B. Fabric Options: Fabric to be 9-gauge wire, woven in a 2" diamond mesh. Top selvage to be twisted and barbed, bottom selvage to be knuckled unless otherwise specified.
 - 1. Aluminized fabric shall be manufactured in accordance with ASTM A 491 and coated before weaving with a minimum .40 ounces of aluminum per square foot of surface area. The steel wire and coating shall conform to ASTM A817.
 - 2. Zinc-coated fabric shall be galvanized before or after weaving in accordance with ASTM A392, Class 1 or Class 2.
 - 3. Color coated fabric to be per ASTM F668 Standard Specification for PVC and other Organic Polymer-Coated Steel Chain-Link Fence Fabric.

2.02 CONCRETE MIX

- A. Concrete: Conforming to ASTM C 94, having a minimum compressive strength of 3,000 PSI at 28 days.

2.03 COMPONENTS

- A. Rails and Braces: 1-5/8" O.D.
- B. Gates: Per ASTM F900
- C. Fittings, Tie Wires, and Hog Rings: Per ASTM F626

- D. Tension Wire: Per ASTM A824 (if required) Color coated to be per ASTM F1665.
- E. Barbed Wire: If required, commercial quality steel, 12-1/2 gauge, two strand twisted line wire with a 4 point barbs at 5 inch spacing. Coating shall consist of a minimum of 0.80 ounces of zinc per square foot of wire surface conforming to ASTM A585. Color coated to be per ASTM F1664.
- F. Barbed Tape: If required, options are available in ASTM F 1910 Table 1 and 2.

PART 3 - EXECUTION

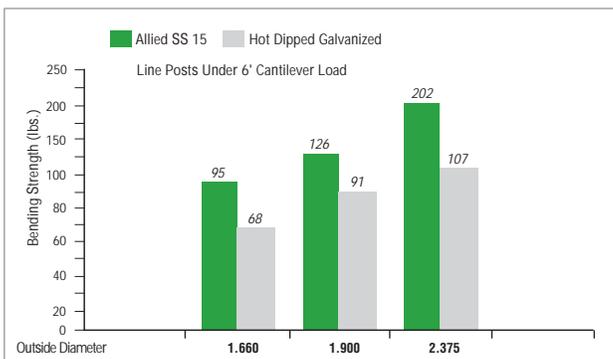
3.01 INSTALLATION

- A. General: Installation to conform to ASTM F567.
- B. Height: Provide height as indicated on contract drawings.
- C. Post Spacing: Space line posts at intervals not exceeding ten feet.
- D. Post Setting: Set terminal, gate and line posts plumb in concrete footings. Top of footing to be 2" above grade and sloped to direct water away from posts.
- E. Bracing: Brace Gate and terminal posts back to adjacent line posts with horizontal brace rails and diagonal truss rods.
- F. Top Rail: Install through line loop caps connecting sections with sleeves to form a continuous rail between terminal posts.
- G. Bottom / Middle Rail: Install between posts with line rail clamps or rail ends and bands.
- H. Fabric: Pull fabric taut with bottom selvage 2" above grade. Fasten to terminal posts with tension bars threaded through mesh and secured with tension bands at maximum 15" intervals. Tie to line posts and top rails with tie wires spaced at maximum 12" on posts and 24" on rails. Attach to bottom/top tension wire with hog rings at maximum 24" intervals.
- I. Barbed Wire: Anchor to terminal extension arms, pull taut, and firmly install in slots of line post extension arms.
- J. Gates: Install gates plumb, level and secure for full opening without interference. Anchor center stops and keepers in concrete.
- K. Fasteners: Install nuts for fittings, bands, and hardware bolts on inside of fence.
- L. Barbed Tape: Install in accordance with ASTM F1911. Consult with manufacturer for unique applications.

3.02 COMPLETION

- A. The area of installation shall be left free of debris caused by the installation of the fence.

SS 15 Strength Comparison



Performance SS 15

Strength	40% Stronger
Durability (Corrosion Resistance)	Superior Coatings
Appearance	Smooth, bright finish
Weight Savings	35% lighter
Weldability	Less Burnback
Ease of Fabrication	Less flaking during fabrication
Value	The Quality you expect with domestically manufactured material

Bundle Counts for SS 15

Shape	O.D.	Bundle Qty.
Round	1.315	91
Round	1.660	61
Round	1.900	61
Round	2.375	37

Residential Pipe and Tube Products

For Exterior Residential Framework Applications

Allied Tube & Conduit® products have meant quality and integrity in the chainlink fence industry and now that confidence can be extended to Residential Framework Applications.

Allied's unique Flo-Coat® process is the superior method of galvanizing steel tubing. It begins with flat strip steel which is cold-formed and then electric-resistance or induction welded. After welding, the tube receives a triple layer of protection which includes a zinc interior coating, a chromate conversion coating, and a clear organic top-coat all applied in-line to ensure a uniform coating process which creates a smooth shiny finish that is unmatched in terms of strength and durability.

Residential fencing with Allied's Flo-Coat process exhibits greater corrosion resistance because of the synergism created between the coatings; the chromate conversion coating passivates the zinc to slow down the white rust growth process, and the clear top-coat then "seals in" the protection. The clear third coating also acts as a primer for powder-coating and painting.

Extensive pre-cleaning is unnecessary, and excellent adhesion and abrasion characteristics are achieved, even at high baking temperatures.

- *Manufactured in the USA*
- *Same coating process as used in Allied's SS High Strength Framework product line*
- *Triple Coated using Certifiable High Grade Zinc*



Allied Residential Pipe and Tube Product Chart

Type	Common Size	Actual O.D. (inches)	20 Gauge	18 Gauge	17 Gauge	16 Gauge
Kennels*	1-3/8"	1.315	X			
Top Rail	1-3/8"	1.315		X	X	X
Top Rail/Line Post	1-5/8"	1.660		X	X	X
Line Post	2"	1.900		X	X	X
End/Corner Post	2-1/2"	2.375		X	X	X

Call your local sales representative for stock availability and special sizes.

* For portable kennels and temporary construction panels.

**For strength,
performance and
lasting appearance,
no tube product
matches Allied!**

- Exterior is in-line galvanized with .4 oz/ft² of lead-free zinc and a conversion coating.
- Top rail is available in 10'-6" lengths for ease of transport for the DIY handyman.
- Clear acrylic coat to maintain a uniform and bright finish.
- Interior, including the weld seam, is thermally coated with a 90% zinc rich spray.
- Cold formed to a minimum of 40,000 PSI yield strength.
- Technical assistance and recommendations are available from our technical team. Visit our website at www.atkore.com for more information.



Square/Rectangular Products

For Exterior Framework Applications

The manufacturers of SS 40, the most specified fence framework in the industry, also provide square framework for ornamental fencing and other special applications.

Allied's square tube receives the same triple layer Flo-Coat® protection as all our other fence products, providing a shiny finish that is unmatched in terms of durability.

Allied square product is ready to paint or powder coat with no priming or special preparation needed. Our square product provides a far greater corrosion resistance than coating over steel that has not been galvanized.

Allied square material conforms to ASTM F-2408-09, Standard Specification for Ornamental Fences Employing Galvanized Steel Tubular Pickets 5.1, and 5.1.1.

Applications

- *Used as a component in decorative fencing systems employing painted or coated panels joined to form an aesthetically pleasing, structurally sound fence enclosure.*
- *Posts and rails for wood privacy fence*
- *Stiffen and support wood gates*
- *Available in a range of sizes for use as framework for High Security expanded metal, woven and welded wire applications.*



Allied Square/Rectangular Tube Available Sizes

- Available with POLYKOTE® polyester coating
- Pickets available with spear top
- Square products are available in sizes ranging from .625" through 4.00"
- Square products come in gauges ranging from 18 through 11
- Rectangular products are available in sizes ranging from 1" x 2" through 2" x 6"
- Rectangular products come in gauges ranging from 20 through 8
- Call your local sales representative for stock availability, special sizes and gauges

Square/Rectangular Coating Resistance

Allied's coating resists the following:

- Gasoline
- Motor Oils
- Common Household Chemicals
- Wines, Beers, Soft Drinks, Hard Liquor
- Disinfectants (Household/ Commercial Varieties)
- Abrasion
- Meat Products
- Bleach
- Damage by Impact
- Citrus Products
- Scratches

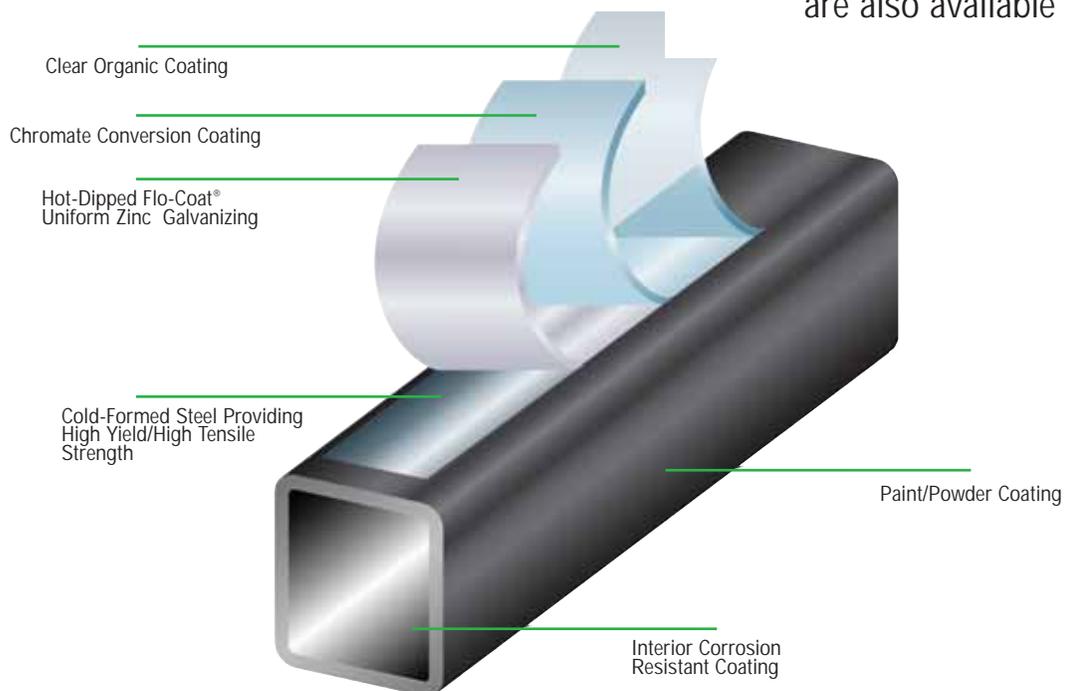
*These tests were conducted in a controlled environment, and our product was subjected to these substances for a short duration of time. Tests were conducted over Allied's organic clear OD coating as a final finish.

Allied Tube products are manufactured:

- With steel strip conforming to ASTM A1011
- With zinc conforming to ASTM B 6 High Grade and Special High Grade Zinc
- ASTM F2408-09



Galvanized or Polykote Pickets are also available



POLYKOTE® Color Fence Framework Products

For Exterior Color Framework Applications – The Color of Quality

Residential POLYKOTE provides an excellent measure of physical security and adds value to any residence.

Commercial POLYKOTE affords strong, long-lasting protection in commercial installations. Its attractive finish complements any business location.

Recreational POLYKOTE blends well with recreational environments and provides superior protection against weathering and impact abuse.

Physical Properties POLYKOTE Color Fence Framework is manufactured from high tensile steel and cold-formed for exceptional strength.

Superior Corrosion Resistance After the Flo-Coat® process, a three mil coating of high-quality color polyester is applied and heat set.

Durable Finish The result is a durable finish that will retain its beauty for years to come, under even the most severe conditions.

Specification Compliance
SS 20®, SS 30® and SS 40®
POLYKOTE is manufactured in compliance with ASTM F1043. All square ornamental profiles are manufactured in compliance with ASTM F2408-09.



POLYKOTE Coating Information

POLYKOTE Manufacturing Process:

- Five stage wash & pre-treatment system, including a multi-metal phosphate conversion coating
- Dry off oven
- Electrostatic application of high-performance outdoor polyester powder
- Infrared and conventional oven cure

POLYKOTE Test Performance:

- Salt Spray Test as per ASTM B117
- Weatherometer as per ASTM G155
- Adhesion as per ASTM D3359

Film Thickness of POLYKOTE:

- 3 mils of high performance outdoor polyester

Warranty:

- 15 years - POLYKOTE will not crack, blister, flake or craze under normal use

Environmentally Responsible

Allied Tube & Conduit uses environmentally friendly powder and pretreatment chemicals.

No toxic heavy metals, chlorinated organics or organic solvents are used in the production of POLYKOTE.

POLYKOTE fence is recyclable.

Residential Tubing and Square Ornamental Profiles Available

SS 15™ Posts	Outside Dimensions (in.)	Pipe Wall Thickness (in.)	Weight (lbs./ft.)	Section Modulus (inches ³)	Yield Strength (PSI)	Bending Moment (lbs. in.)	Bending Strength (lbs.)	
							4' Cantilever	6' Cantilever
1-5/8" O.D.	1.660	0.072	1.22	0.1367	50,000	6,835	142	95
1-7/8" O.D.	1.900	0.072	1.41	0.1821	50,000	9,104	190	126
2-3/8" O.D.	2.375	0.072	1.77	0.2911	50,000	14,556	303	202
Top Rail							10' Free Supported	
1-3/8" O.D.	1.315	0.072	0.96	0.0829	50,000	4,143	138	
1-5/8" O.D.	1.660	0.072	1.22	0.1367	50,000	6,835	228	

SS 20® Posts	Outside Dimensions (in.)	Pipe Wall Thickness (in.)	Weight (lbs./ft)	Section Modulus (inches ³)	Yield Strength (PSI)	Bending Moment (lbs. in.)	Bending Strength (lbs.)	
							6' Cantilever	
1-7/8" O.D.	1.900	.090	1.74	0.2212	50,000	11,060	154	
2-3/8" O.D.	2.375	.095	2.32	0.3731	50,000	18,655	259	
2-7/8" O.D.	2.875	.110	3.25	0.6364	50,000	31,820	442	
3-1/2" O.D.	3.500	.110	3.98	0.9627	50,000	48,133	669	
Top Rail							10' Free Supported	
1-3/8" O.D.	1.315	.080	1.06	0.0904	50,000	4,519	151	
1-5/8" O.D.	1.660	.085	1.43	0.1576	50,000	7,880	263	

SS 30® Posts	Outside Dimensions (in.)	Pipe Wall Thickness (in.)	Weight (lbs./ft)	Section Modulus (inches ³)	Yield Strength (PSI)	Bending Moment (lbs. in.)	Bending Strength (lbs.)	
							6' Cantilever	
1-7/8" O.D.	1.900	.105	2.01	0.2519	50,000	12,595	175	
2-3/8" O.D.	2.375	.115	2.78	0.4402	50,000	22,006	306	
2-7/8" O.D.	2.875	.125	3.66	0.7116	50,000	35,580	494	
3-1/2" O.D.	3.500	.145	5.20	1.231	50,000	61,550	855	
4" O.D.	4.000	.145	5.98	1.6338	50,000	81,690	1134	
Top Rail							10' Free Supported	
1-5/8" O.D.	1.660	.095	1.59	.173	50,000	8,650	288	

SS 40® Posts	Outside Dimensions (in.)	Pipe Wall Thickness (in.)	Weight (lbs./ft)	Section Modulus (inches ³)	Yield Strength (PSI)	Bending Moment (lbs. in.)	Bending Strength (lbs.)	
							6' Cantilever	
1-7/8" O.D.	1.900	.120	2.28	0.2810	50,000	14,050	195	
2-3/8" O.D.	2.375	.130	3.12	0.4881	50,000	24,405	339	
2-7/8" O.D.	2.875	.160	4.64	0.8778	50,000	43,890	610	
3-1/2" O.D.	3.500	.160	5.71	1.3408	50,000	67,040	931	
4" O.D.	4.000	.160	6.56	1.7819	50,000	89,095	1237	
4-1/2" O.D.	4.500	.160	7.42	2.2859	50,000	114,295	1587	
Top Rail							10' Free Supported	
1-3/8" O.D.	1.315	.104	1.35	0.1110	50,000	5,556	185	
1-5/8" O.D.	1.660	.111	1.84	0.1961	50,000	9,805	327	

15-Year Limited Warranty - POLYKOTE® Color Fence Framework is covered by a 15 Year Limited Warranty on defects in workmanship and materials to the original purchaser. No other implied or express warranties are extended. A copy of Allied's warranty is available upon request.

Inventory Locations: Harvey, IL / Philadelphia, PA / Phoenix, AZ
 For information on Razor Ribbon® brand barbed tape products, please visit www.razorribbon.com

Razor Ribbon® Barbed Tape Obstacles

Exterior Perimeter Security Products

Allied Tube & Conduit® a brand of Atkore International, Inc. is the world's leading manufacturer of RAZOR RIBBON® barbed tape products like INSTABARRIER®, DETAINER HOOK BARB®, and the HATBOX which has been supplied to correctional facilities on six continents and is globally recognized as the industry standard in terms of both quality and design.

Our products are supplied to facilities requiring fail-safe physical barriers to ensure confinement or prevent intrusion on any security level.

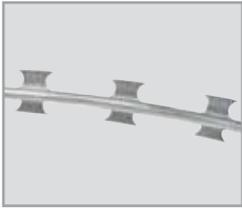
Our products are engineered for consistency in structure, material composition and conforms to federal, state and industrial specifications.

All barbed tape products are manufactured in a full range of diameters, reinforced or non-reinforced, to exacting standards.

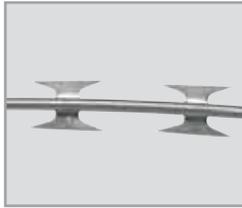


Razor Ribbon® Barbed Tape Styles

Exterior Perimeter Security Products



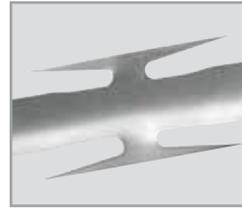
Short Barb:
Military battlefield and training barrier.



Medium Barb:
Minimum security, construction sites, manufacturing and other low level security applications.



Long Barb:
Low level confinement and detention applications. Low level utility companies, airport perimeters, parking lots, warehousing, manufacturing, storage areas.



Instabarrier Barb:
Maximum security confinement applications, nuclear generating plants, petroleum/chemical storage, refineries, sensitive areas at airports and nuclear weapons storage, etc.



Detainer Hook Barb:
Confinement applications, nuclear generating plants, petroleum/chemical storage, refineries, sensitive areas at airports and nuclear weapons storage, etc.

Maze® Barbed Tape

Exterior Perimeter Security Products

Maze barbed tape obstacle is the original long-barb, wire-reinforced concertina.

Maze barbed tape is used in more minimum to medium security applications around the world than any other barbed tape.

Single coil wire reinforced concertinas are fabricated from 0.025" thick AISI 430 (SS) stainless steel or ASTM A653 (GA) galvanized steel.

Each roll consists of 31 coil loops with pairs of loops alternately clipped together. Clusters of four needle sharp barbs are located 4" o.c. along the spiral turns.

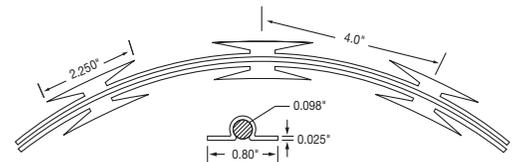
Concertina rolls are available in combinations of SS or GA, tape and core wire. Barbed tape is wrapped 230* around 0.098" diameter SS or GA core wire.



USES: Minimum to medium security confinement and detention applications, low level utility companies, airport perimeters, etc.

Single Coil Concertina Maze® (WIRE REINFORCED)

NSN	Dia.	Coil Loops	Strip Matl.	Core Wire	Clips	Coil Spacing	Yield	Pkg.	ASTM F 1910 Item#
5660-01-457-9847	18"	31	SS	GA	3	12"	15'	4/Box	#8
5660-01-495-6178	18"	31	GA	GA	3	12"	15'	4/Box	#8
5660-01-457-9849	18"	31	SS	SS	3	12"	15'	4/Box	#9
5660-01-457-9850	24"	31	SS	GA	3	16"	20'	5/Box	#10
5660-01-495-6284	24"	31	GA	GA	3	16"	20'	5/Box	#10
5660-01-457-9852	24"	31	SS	SS	3	16"	20'	5/Box	#11
—	30"	31	SS	GA	3	16"	20'	3/Box	—
—	30"	31	GA	GA	3	16"	20'	3/Box	—
—	30"	31	SS	SS	3	16"	20'	3/Box	—
—	36"	31	SS	SS/GA	3	16"	20'	4/Box	—
—	18/24"	31/31	SS	SS/GA	3	12"	15'	5/Box	—
—	24/30"	31/31	SS	SS/GA	3	16"	20'	5/Box	#22



Supermaze® & Nato Barrier® Barbed Tape

Maximum Security Barrier Applications

Super Maze and Nato Barrier barbed tape products are designed for high density maximum security applications. Nato Barrier barbed tape was given its name after being successfully installed around several extremely sensitive NATO facilities in Northern Europe.

Single coil wire reinforced concertinas are fabricated from 0.025" thick AISI 430 (SS)

stainless steel or ASTM A653 (GA) galvanized steel. Each roll consists of 51 coil loops with pairs of loops alternately clipped together. Clusters of four needle sharp barbs are located 4" o.c. along the spiral turns. Concertina rolls are available in combinations of SS or GA, tape and core wire.

Barbed tape is wrapped 230* around 0.098" diameter SS or GA core wire.

USES: *Maximum security*

Single Coil Supermaze® (WIRE REINFORCED - EXTRA LOOPS & EXTRA CLIPS)

NSN	Dia.	Coil Loops	Strip Matl.	Core Wire	Clips	Coil Spacing	Yield	Pkg.	ASTM F 1910 Item#
5660-01-495-9534	30"	51	SS	SS	5	12"	25'	3/Box	#15
5660-01-495-9566	30"	51	SS	GA	5	12"	25'	3/Box	#15
—	40"	51	SS	SS	7	12"	25'	2/Box	#18
—	40"	51	SS	SG	7	12"	25'	2/Box	#18
—	60"	51	SS	SS	9	12"	25'	2/Box	#19
—	60"	51	SS	SG	9	12"	25'	2/Box	#19



General Purpose Barbed Tape Obstacle Type II

Exterior Perimeter Security Products

GPBTO Type II barbed tape is a double coil, non-reinforced product made from spring quality austenitic stainless steel.

Originally designed by the U.S. Military as an entanglement obstacle.

Detainer Hook[®] Barbed Tape

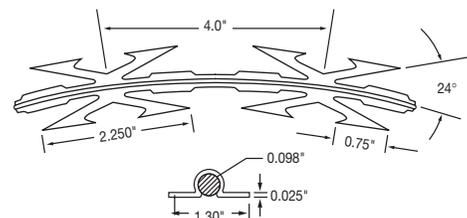
Maximum Security Barrier Applications

Detainer Hook Barb barbed tape obstacle is the premier physical perimeter barrier available in the world.

The newest, most effective security product being specified today, Detainer Hook Barb[®] barbed tape offers unequalled physical protection and psychological deterrence. Single coil wire reinforced concertinas are fabricated from 0.025" thick AISI

430 (SS) stainless steel or ASTM A653 (GA) galvanized steel.

Each roll consists of 31 coil loops with pairs of loops alternately clipped together. Clusters of four needle sharp barbs are located 4" o.c. along the spiral turns. concertina rolls are available in combinations of SS or GA, tape and core wire. Barbed tape is wrapped 230* around 0.098" diameter SS or GA core wire.



USES: Confinement applications, nuclear generating plants, petroleum/chemical storage, refiners, sensitive areas at airports and nuclear weapons storage, etc.

Detainer Hook Barb (WIRE REINFORCED)

NSN	Description	Dia.	Coil Loops	Strip Matl.	Core Wire	Clips	Coil Spacing	Yield	Pkg.
5660-01-495-6189	Detainer single coil concertina	19"	31	SS	GA	3	12"	15'	4/Box
5660-01-495-6161	Detainer single coil concertina	19"	31	GA	GA	3	12"	15'	4/Box
5660-01-495-6200	Detainer single coil concertina	19"	31	SS	SS	3	12"	15'	4/Box
5660-01-494-0228	Detainer single coil concertina	25"	31	SS	GA	3	16"	20'	5/Box
5660-01-494-0218	Detainer single coil concertina	25"	31	SS	SS	3	16"	20'	5/Box
5660-01-495-9585	Detainer single coil concertina	31"	51	SS	GA	5	12"	25'	3/Box
5660-01-495-9581	Detainer single coil concertina	31"	51	SS	SS	5	12"	25'	3/Box

Instabarrier[®] Barbed Tape

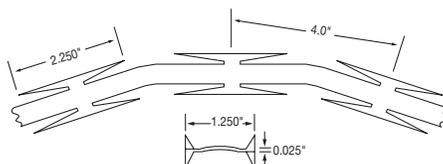
Maximum Security Confinement Applications

Instabarrier non-reinforced barbed tape is characterized as being the most versatile of all barbed tape products. Designed for both temporary and permanent use, it permits rapid recovery and reuse.

Single coil non-reinforced concertina 30" in diameter are fabricated from 0.025" this AISI 301 SS (stainless

steel). Each roll consists of 101 coil loops with pairs of loops alternately spot welded together at five locations around the circumference.

Cluster of four needle sharp barbs are located 4" o.c. along the spiral turns. Non-reinforced concertinas are only available in stainless steel.



USES: Nuclear generating plants, petroleum/chemical storage, refiners, sensitive areas at airports and nuclear weapons storage, etc.

Instabarrier[®] (NON-REINFORCED) Single Coil Concertina Rapid Deployment

NSN	Dia.	Loops	Coil Matl.	Strip Cable	Welds	Spacing	Coil Yeild	Pkg.	ASTM F 1910 Item#
5660-01-495-6363	30"	101	SS	1	5	12"	50'	7/Box	#25

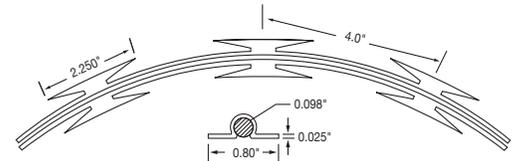
Razor Ribbon® Helical Barbed Tape

Low Level Security Applications

USES: Low level security applications such as warehousing, manufacturing, parking lots, storage, and other security applications.

Razor Ribbon® Helical Single Coil (WIRE REINFORCED)

NSN	Dia.	Coil Loops	Strip Matl.	Core Wire	Coil Spacing	Yield	Pkg.	ASTM F 1910 Item#
5660-01-457-9757	18"	33	SS	GA	18"	50'	5/Box	#2
5660-01-495-6123	18"	33	GA	GA	18"	50'	5/Box	#2
5660-01-457-9828	18"	33	SS	SS	18"	50'	5/Box	#1
5660-01-457-9842	24"	33	SS	GA	18"	50'	5/Box	#6
5660-01-495-6277	24"	33	GA	GA	18"	50'	5/Box	#6
5660-01-457-9843	24"	33	SS	SS	18"	50'	5/Box	#5
—	30"	33	SS	SS	18"	50'	3/Box	—
—	30"	33	SS	GA	18"	50'	3/Box	—
—	30"	33	GA	GA	18"	50'	3/Box	—
—	36"	33	SS	SS	18"	50'	2/Box	—
—	36"	33	SS	GA	18"	50'	2/Box	—
—	36"	33	GA	GA	18"	50'	2/Box	—



Razor Strand® Barbed Tape

Minimum Security for Construction and Manufacturing Sites

Razor Strand barbed tape obstacle is an alternative to traditional barbed wire for low level security applications when added psychological deterrence is desired.

Barbed Tape shall be fabricated from zinc-galvanized steel and shall conform to ASTM A 525, Rockwell hardness (15T) 80-85. Barbs shall be alternately offset

.15 - .45 inches from the plane of the tape centerline.

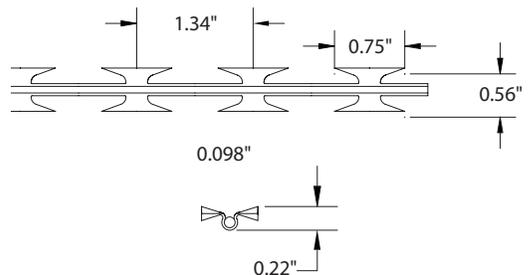
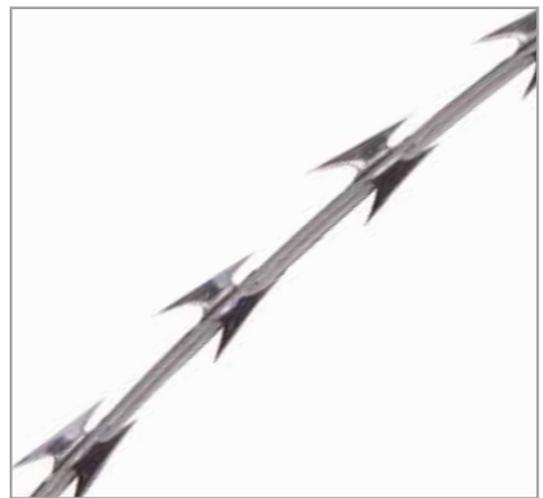
The galvanized steel core wire shall be in accordance with ASTM A-764, Finish 2, Class II, Type 3, with a minimum tensile strength of 220,000 PSI. Barbed tape width shall be .75 inches. Barbs shall be .75 inches in length and punched at 1.34 inch centers.

USES: Minimum security, construction sites, manufacturing and other low level security applications.

Barbed Razor Strand (WIRE - REINFORCED)

Description: Loosely packaged reinforced product

Length	Weight	Length	Weight	
263'	15 lbs. 6.8 kg.	527'	28 lbs. 12.7kg.	
351'	19 8.6	557'	30 13.6	
410'	22 10	586'	32 14.5	
439'	24 10.9	879'	47 21.3	



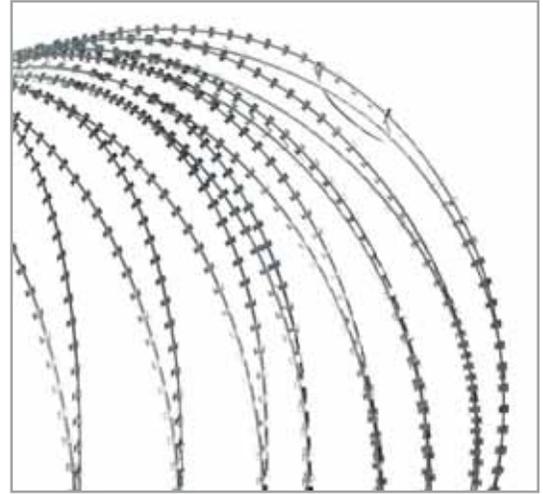
BTC Barbed Tape Concertina

Single Coil Wire Reinforced Concertinas

Single coil wire reinforced concertinas, 38" in diameter are fabricated from 0.020" thick ASTM A653 (GA) galvanized steel strip. Strip is clinched around a galvanized steel core wire. Each roll consists of 56 coil loops with pairs of coil loops alternately clipped together at

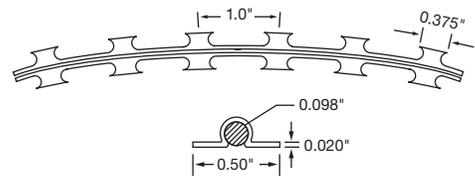
five locations around the circumference. Each coil extends to 50' when deployed at 21" coil spacing. Two opposing handles at each end are attached to the end coils. Refer to Military Specifications A-A-555-22A for additional information.

USES: Military battlefield and training barrier.



Military Tactical Barrier Concertina Coil (WIRE REINFORCED)

NSN	Dia.	Coil Loops	Strip Matl.	Core Wire	Coil Spacing	Yield	Packaging
—	18"	56	SS	SS	16"	37'	1/40
—	18"	56	SS	GA	16"	37'	1/40
—	18"	56	GA	GA	16"	37'	1/40
—	28"	56	SS	SS	21"	50'	1/40
—	28"	56	SS	GA	21"	50'	1/40
—	28"	56	GA	GA	21"	50'	1/40
—	38"	56	SS	SS	21"	50'	1/40
—	38"	56	SS	GA	21"	50'	1/40
5660-00-921-5516	38"	56	GA	GA	21"	50'	1/40



Allied Fence Pickets are specially designed for use with BTC Barbed Tape Type Concertina.

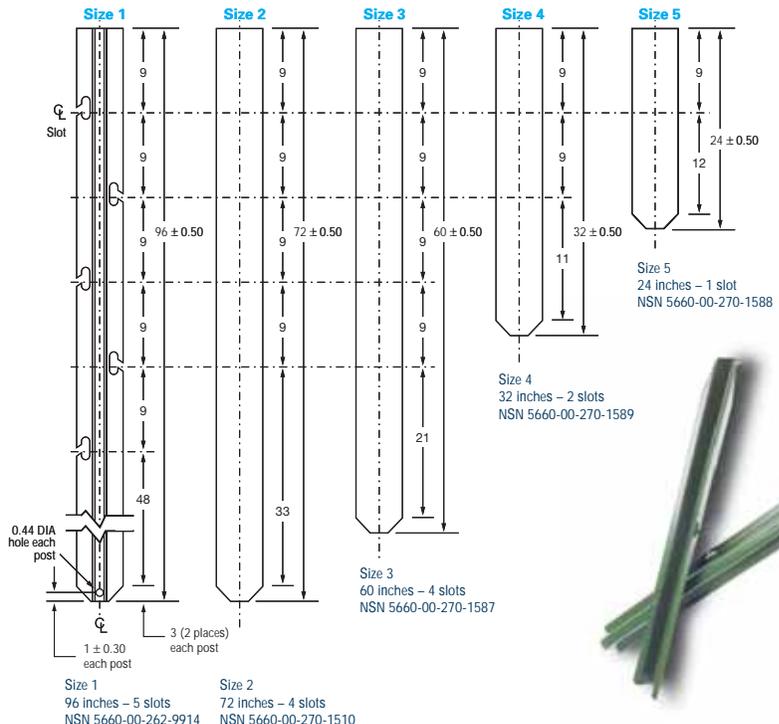
Razor Ribbon® Fence Pickets

Exterior Perimeter Security Products

Allied Tube and Conduit's fence picket is designed for the rapid installation of security perimeter. After the post is driven into the ground, barbed wire is inserted into the built-in slots along the length of the perimeter. This system can either stand alone or be augmented with the addition of barbed tape concertina attached to the barbed wire when needed.

The fence picket complies with federal specifications and GSA guidelines for Fence Post, Drive Type, Spadeless.

The posts, depending on length, have alternating slots on each side every 9" to accommodate strands of barbed wire. The post width is approximately 3" and can be ordered in a variety of lengths ranging from 24" to 96".



Hatbox RDU Unit

Security for Military and Police Rapid Deployment Applications

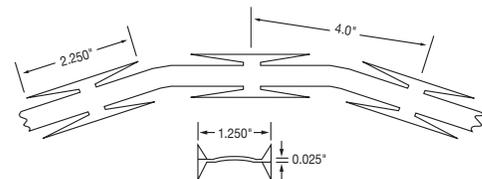
The **HatBox** is designed for military and police use in varying climates and terrain conditions. This unit can be rapidly deployed in hallways, stairwells, entrances and exit areas, etc. and quickly recovered for repeated use. Allied's HatBox can be used in both indoor and outdoor applications. Each unit comes with all of the materials and tools necessary for immediate use.

Rapid dispensing anti-personnel barrier provides 50' (15m) of 30" (764mm) diameter barbed tape fabricated from 0.025" (0.64mm) thick 301 austenitic stainless steel strip hardened to Rockwell (30N) 50-55. Clusters of four needle sharp barbs shall be punched 4" (102mm) on center. Barb cluster width shall be 1.210" (31mm). Barbs shall be

alternately offset from the tape's centerline 0.15" -0.45" (3.8mm - 11mm). Each coil loop shall contain (24) ± 1 barb cluster.

Adjacent pair of coil loops shall be spot welded together at (5) points of approximate equal spacing about the perimeter in such a way to prevent one slipping passed the other. Weld attachments shall be capable of surviving a minimum pure tensile load of 400# (181 kg).

One jacketed stainless steel wire rope 7 x 7 strand 3/64" minimum diameter shall be attached to each pair of coil openings at 12" ±2" (305mm ±51mm) 101 coil loops shall cover 50' ±2" (15.2m ±51mm). 16 gauge twist ties, gloves, stakes and tie tool furnished with each unit housed in a fiber case canister (hatbox).



USES: Riot and crowd control.

Hatbox Rapid Dispensing & Recovery Unit

NSN	Description	Dia.	Coil Loops	Strip Matl.	Cable	Welds	Yield	Pkg.
5660-01-495-6412	Single Coil Concertina Rapid Deployment	30'	101	SS	1	5	50'	One/ Container



Triple Strand RDU

Security for Rapid Deployment Applications

Allied Tube & Conduit's **Triple Strand Rapid Deployment Unit (RDU)** is a quickly deployed security perimeter appropriate for emerging threats or for a permanent barrier.

With the capacity to deploy 480' of Razor Ribbon® in just two minutes, our Triple Strand RDU takes the place of a large crew working hours in the field. The unit deploys with only two people and removes the potentially hazardous conditions associated with field installation of barbed tape coils.

Rapid Deployment System consists of a stack of one (1) 60" Barbed Tape Coil on top of two (2) 30" Barbed Tape Coils.

USES: Economical, simple and reusable system to provide the military, police, municipalities, and commercial / industrial security integrators with instant physical perimeter protection

Unit Design

We start with two thirty inch concertina coils side-by-side on the ground with one sixty inch concertina coil sitting on top to provide a 7 1/2' high security barrier. We place rigid stanchions every eleven feet to provide support. A heavy cable ensures the unit is not over-extended or collapsed between stanchions. The design ensures the perimeter is stable. Stepping through this barrier is impossible without extensive efforts to cut and remove the wire. It's easily integrated with electronic sensing equipment.

Standard Materials

The Triple Strand RDU comes standard with Allied's short barb material. This material was specifically designed for military applications and is considered a "delay" barrier, like steel Velcro. However, the Triple Strand RDU can be customized with any of the full line of Razor Ribbon barbed tape products including our Detainer Hook® barb.

A network of structural support trusses every 11' add rigidity and allow accessories to be fastened to deployment unit. Additionally support trusses come with provisions for ground stakes and an integral cable system to assist in deployment over any type of terrain. Deployment time is two (2) minutes and retraction time is between 12 to 17 minutes. Deployment length is 480'. Package size is 90" high by 62" wide. Ship weight is 2,400 lbs.

The Barbed Tape is standard galvanized military BTC with galvanized high tensile strength core wire. Coils are fastened together in an alternate loop arrangement to minimize any intrusion attempts.

3 easy steps deploys nearly 500' of Razor Ribbon® in just 2 minutes



1. SET Set the RDU in place using any vehicle with fork attachments. A trailer option is available.



2. STRETCH Deploy the unit with a two man team. In just two minutes, a 480' triple strand barrier is in place.

3. SECURE Anchor the supports in place.

Triple Strand Rapid Deployment Unit

Nat. Stock Number	Description	Dia.	Strip Material	Height	Width	Core Wire	Yield	Pkg.
5660-01-537-7956	Triple Strand RDU with Magazine	(2)-30" (1)-60"	Galvanized	90"	62i	Galva nized	480'	2,400 lbs.
5660-01-537-7957	Triple Strand RDU without Magazine	(2)-30" (1)-60"	Galvanized	90"	62'	Galvanized	480'	2,100 lbs.

Trailer Options Available

Accessories

Hexarmor Gloves

These gloves were designed specifically for handling barbed tape products. These gloves are cut, puncture and abrasion resistant.



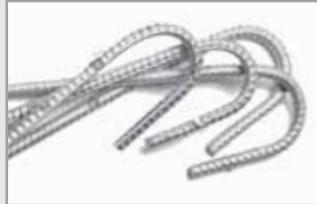
Wire Tie Twist Tool

Used to twist wire ties in fence anchored installations



Ground Stakes

Required to anchor ground based installations, usually positioned at 10 foot intervals.



Warning Signs

Used to alert unsuspecting persons of imminent danger.



Hog Rings

For fence anchored installations, Hog Rings are used to connect the barbed tape to the fence fabric.



Arm/Sleeve Guard

Used to protect the installer, the arm/sleeve guard covers from the wrist to the shoulder.



Hog Ring Pliers

Used to compress hog rings in fence anchored installations.



Wire Ties

Used to secure and anchor installations.



Razor Ribbon® Product Selector Guide

Product Name	Diameter		Loops	Clips	Loop Spacing		Length Per Roll		Weight Per Roll	
	(Inches)	(mm)			(Inches)	(mm)	(Feet)	(M)	(lbs)	(kgs)
BTC Barbed Tape 	18	450	56	3	16	406	37	11	15	6.8
	28	700	56	3	21	533	50	15	24	10.8
	38	954	56	5	21	533	50	15	31	14
Maze® 	18	450	31	3	12	300	15	4.5	11	5
	24	600	31	3	16	400	20	6	17	7.7
	30	750	31	3	16	400	20	6	22	10
	36	900	31	3	16	400	20	6	25	11
	18/24	450/600	31/31	3	12	304	15	4.5	28	13
	24/30	600/750	31/31	3	16	406	20	6	39	18
Supermaze® 	30	750	51 (81)	5	12	300	25 (40)	7.5 (12)	32 (52)	15 (24)
	36	900	51 (81)	5	12	300	25 (40)	7.5 (12)	37 (59)	17 (27)
	40	1000	51 (81)	5	12	300	25 (40)	7.5 (12)	44 (68)	20 (31)
Nato Barrier® 	40	1000	51 (81)	7	12	300	25 (40)	7.5 (12)	44 (68)	20 (31)
	60	1500	51 (101)	9	12	300	25 (40)	7.5 (15)	65 (127)	30 (58)
Razor Ribbon® Helical 	18	450	33	-	18	450	50	15	11	5
	24	600	33	-	18	450	50	15	17	7.7
	30	750	33	-	18	450	50	15	22	10
	36	900	33	-	18	450	50	15	25	11
Detainer Hook® Barb 	25	635	31	3	16	400	20	6	19	9
	31	787	31 (51)	3 (5)	16 (12)	400 (300)	20 (25)	6 (7.5)	24 (35)	11 (16)
	37	939	51	5	12	300	25	7.5	40	18
	41	1040	51	7	12	300	25	7.5	47	21
	61	1560	81 (101)	9	12	300	40 (50)	12 (15)	110 (139)	50 (63)
InstabARRIER® 	24	600	101	3 welds	12	300	50	15	44	20
	30	750	101	5 welds	12	300	50	15	53	24
	40	1000	101	7 welds	12	300	50	15	71	32
	60	1500	101	13 welds	12	300	50	15	106	48
Gen. Purpose BTO	24/30	600/750	33/33	-	24	600	66	20	36	16
		Length (ft)	Weight		Length (ft)	Weight				
Razor Strand 	263	15 lbs.	6.8 kg.		527	28 lbs.	12.7kg.			
	351	19	8.6		557	30	13.6			
	410	22	10		586	32	14.5			
	439	24	10.9		879	47	21.3			

Razor Ribbon® Helical, Maze®, Supermaze®, Nato Barrier®, Detainer Hook® Barb

Tape Material: 430 Stainless Steel / 1" wide prior to forming (DHB 1.375")
 Core Material: Galvanized or Stainless Steel / .098" Diameter
 Barb Length / Spacing: 2.4 (±.10") tip/tip / 4" on center

Non-Reinforced InstabARRIER®, General Purpose BTO-Type II

Tape Material: 301 Stainless Steel / 1.21" wide prior to forming
 Barb Length / Spacing/Offset: 2.4 (±.10") tip/tip / 4" on center / Alternately offset .15" - .45

NOTES: Razor Ribbon® Helical, Maze®, Supermaze®, Nato Barrier® and Detainer Hook® Barb products may be ordered with both galvanized tape and high-tensile galvanized core wire. Some products are available with more or fewer loops per roll. Additional clips per loop are available upon request. In situations where increased product density is desired, reduced coil spacing of wire-reinforced products will affect deployment coverage. Offset barb configuration also available for Maze®, Supermaze®, and Nato Barrier® products.

Warning: The manufacturer recommends that all RAZOR RIBBON® barbed tape obstacles that are mounted on walls and fences have a minimum installation height of 2.13 meters (7 feet) from ground level. The material shall be installed in such a manner as to avoid any and all contact by non-intruding pedestrian traffic. It shall also present an open, obvious and highly visible condition of danger. RAZOR RIBBON® barbed tape obstacles should only be used as ground barriers in proper locations, such as correctional facilities, military bases, or other highly sensitive areas. RAZOR RIBBON® barbed tape obstacles are not meant to be used as ground barriers in commercial, light industrial, or other private applications. RAZOR RIBBON® barbed tape obstacles are not manufactured for use in any residential applications. RAZOR RIBBON®, INSTABARRIER®, DETAINER HOOK® BARB, NATO BARRIER® and MAZE® are registered trademarks.

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