



# UltraCon® Masonry Fasteners

## High Performance in a Wide Range of Applications

The UltraCon® masonry fastening system from Elco Construction Products offers optimal performance in a wide range of masonry applications. Cold formed fasteners, precision-cut Elco® carbide drill bits and high-quality installation tools all work together to provide excellent pull-out and shear values. All components of the system are manufactured to strict quality standards to ensure consistent, trouble-free installation and in-place performance.

UltraCon® fasteners are the optimal solution for concrete, brick or hollow block to attach electrical boxes and clips; wood headers, plywood, or furring strips; exterior insulation systems and more.

### Increased Size for Increased Strength

The new 5/16" diameter UltraCon® fastener provides increased shear and tensile strength to meet the needs of more demanding applications.

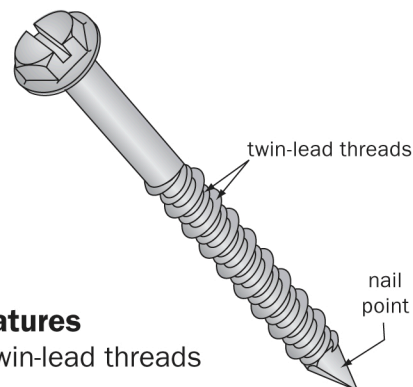
### Superior Resistance to Corrosion

UltraCon® fasteners from Elco Construction Products are coated with Stalgard® finish to provide superior corrosion resistance. Fasteners coated with Stalgard® finish typically show no red rust or other base metal corrosion on significant surfaces even after 800 hours of 5% neutral salt spray exposure (ASTM B117).

### Experience Matters

Elco Construction Products has been manufacturing fastening systems for concrete in the U.S.A. since 1980. Unlike competing masonry fasteners, only UltraCon® fasteners are coated with Stalgard® finish.

To assure quality on your next masonry application, choose the UltraCon® masonry fastening system manufactured by the company known for quality – Elco Construction Products.



### Features

- Twin-lead threads
- Available in 3/16", 1/4" and 5/16" diameters, in a variety of lengths
- Slotted hex head or phillips flat head standard; other styles including TrimFit® heads available
- Blue Stalgard® corrosion-resistant finish standard; silver, white or bronze Stalgard® finish also available on selected sizes
- Install quickly and easily with system drive tools and Elco® carbide-tipped drill bits

### Benefits

- When all three elements of the system are used, consistent performance and maximum pull-out strengths can be realized
- Eliminates need for inserts
- Eases installation of metal, wood and other components to concrete, brick or hollow block

### Approvals

- For 3/16", 1/4" and 5/16" UltraCon® fasteners: Miami-Dade, Florida Notice of Acceptance (NOA) No. 07-0425.01 Exp. 1/8/11





## HEAD STYLES



### Slotted Hex Washer Head

Washer head provides a bearing surface for fast, secure driving; slot permits removal or adjustment with standard screw driver.



### Hex Flange Head

Larger 5/8" washer diameter provides larger bearing surface. Ideal for attaching track systems or other applications that require a washer.



### Hex Head with Oversized Washer (5/16" dia. only)

Larger washer diameter (.530/.540) provides larger bearing surface. Ideal for applications that require a washer.



### Phillips Flat Head

Used primarily in wood applications to countersink head for finished appearance.



### TrimFit® Flat Head

Undersized heads permits use of 1/4" and 5/16" diameter fastener in applications with clearance constraints. Head O.D. .415" nom.



### TrimFit® Hex Head

Undersized heads permits use of 5/16" diameter fastener in applications with clearance constraints. Washer O.D. .435" nom.; hex drive 5/16" A.F.

## INSTALLATION

The UltraCon® masonry fastening system consists of the UltraCon® fastener and installation tool plus an Elco® carbide-tipped drill bit. Consistent performance and maximum pullout strength can be assured only when all three elements of the system are properly used.

### Fastener Length and Diameter

The length of the UltraCon® fastener to be used is determined by combining the thickness of the attachment (A) with the desired depth of embedment in the masonry material (B). It is recommended that a minimum of 1" and a maximum of 1-3/4" embedment be used in determining fastener length.

UltraCon® fasteners come in three diameters: 1/4", 3/16", and 5/16". The diameter of the fastener and the depth of embedment affect pullout strengths. Application strength requirements and safety factors should be considered when determining the depth of embedment and fastener diameter. For assistance, contact your Elco distributor or Elco Construction Products.

### Hole Depth

An Elco® carbide-tipped drill bit is supplied with each box of UltraCon® fasteners. The correct hole depth (B & C) can normally be obtained by drilling the full length of this bit. In all cases, the hole must be at least 1/4" deeper than the depth of the fastener embedment. Normal safety precautions should be observed when drilling the holes to avoid electrical installations, other utilities and reinforcement bars.

### Hole Diameter

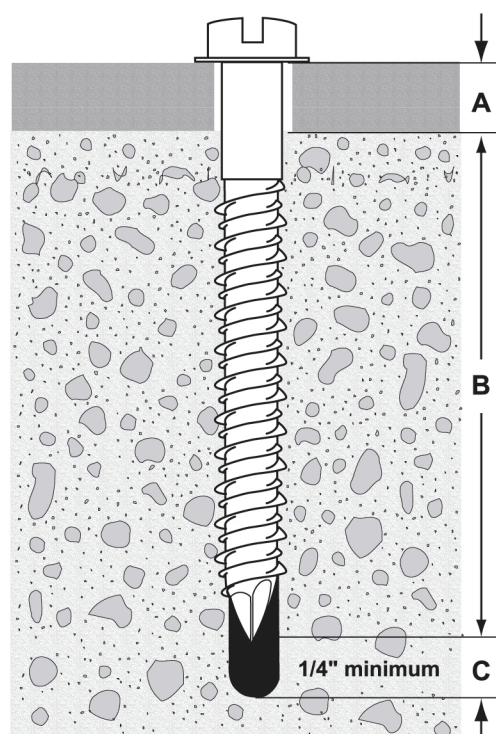
The diameter of the drilled hole is also important to the performance of the UltraCon® masonry fastening system. To provide the proper hole diameters, Elco® carbide-tipped drill bits are manufactured to closer standards than those called for in the American National Standard. Using Elco® carbide-tipped bits will help assure consistent fastener performance and maximum pull-out strength.

A = attachment thickness





B = UltraCon® embedment (min. of 1", max. of 1-3/4")

A + B = UltraCon® anchor length

B + C = Hole depth (must be at least 1/4" deeper than UltraCon® embedment)



### Identification

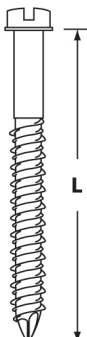
Fastener Dia.	Head Style	Head Mark	sample
all sizes	hex washer, flat hex flange, oversized washer	Elco logo only	 
1/4"	TrimFit® flat	Elco logo and 1 dot opposite of logo	
5/16"	TrimFit® flat	Elco logo and 2 dots opposite of logo	

NOTE: All anchors are packed 100/box with tanged drill bit, unless packed bulk as indicated with \*.

## Anchor Selection Guide


	Dia.	L Length	Drive System	Head Style	Catalog Number			Tanged Bit	
					Blue	Silver	White	Dia.	Length

### Slotted Hex Washer Head



	3/16"	1-1/4"	slotted	hex washer	ELE300			5/32"	3-1/2"
		1-3/4"	slotted	hex washer	ELE310			5/32"	3-1/2"
		2-1/4"	slotted	hex washer	ELE320			5/32"	4-1/2"
		2-3/4"	slotted	hex washer	ELE330			5/32"	4-1/2"
		3-1/4"	slotted	hex washer	ELE340			5/32"	5-1/2"
		3-3/4"	slotted	hex washer	ELE350			5/32"	5-1/2"
		4"	slotted	hex washer	ELE360			5/32"	5-1/2"
	1/4"	1"	slotted	hex washer	ELE400			3/16"	3-1/2"
		1-1/4"	slotted	hex washer	ELE405			3/16"	3-1/2"
		1-3/4"	slotted	hex washer	ELE415	ELG341*	ELD195*	3/16"	3-1/2"
		2-1/4"	slotted	hex washer	ELE425	ELG371*	ELD205*	3/16"	4-1/2"
		2-3/4"	slotted	hex washer	ELE435	ELG401*		3/16"	4-1/2"
		3-1/4"	slotted	hex washer	ELE445	ELG431*	ELD225*	3/16"	5-1/2"
		3-3/4"	slotted	hex washer	ELE455			3/16"	5-1/2"
		4"	slotted	hex washer	ELE465			3/16"	5-1/2"
		5"	slotted	hex washer	ELE475		ELD255*	3/16"	6-1/2"
		6"	slotted	hex washer	ELE485		ELD265*	3/16"	7-1/2"

### Phillips Flat Head



	3/16"	1-1/4"	phillips	flat	ELF305	ELG521*	ELD320*	5/32"	3-1/2"
		1-3/4"	phillips	flat	ELF315	ELG551*	ELD330*	5/32"	3-1/2"
		2-1/4"	phillips	flat	ELF325	ELG581*	ELD340*	5/32"	4-1/2"
		2-3/4"	phillips	flat	ELF335	ELG611*	ELD350*	5/32"	4-1/2"
		3-1/4"	phillips	flat	ELF345	ELG641*	ELD360*	5/32"	5-1/2"
		3-3/4"	phillips	flat	ELF355	ELG671*	ELD370*	5/32"	5-1/2"
		4"	phillips	flat	ELF365		ELD380*	5/32"	5-1/2"
	1/4"	1-1/4"	phillips	flat	ELF400	ELG731*	ELD385*	3/16"	3-1/2"
		1-3/4"	phillips	flat	ELF410	ELG761*	ELD395*	3/16"	3-1/2"
		2-1/4"	phillips	flat	ELF420	ELG791*	ELD405*	3/16"	4-1/2"
		2-3/4"	phillips	flat	ELF430	ELG821*	ELD415*	3/16"	4-1/2"
		3-1/4"	phillips	flat	ELF440	ELG851*	ELD425*	3/16"	5-1/2"
		3-3/4"	phillips	flat	ELF450	ELG881*	ELD435*	3/16"	5-1/2"
		4"	phillips	flat	ELF460		ELD445*	3/16"	5-1/2"
		5"	phillips	flat	ELF470			3/16"	6-1/2"
		6"	phillips	flat	ELF480			3/16"	7-1/2"
	5/16"	2-1/4"	phillips	flat		ELG941*		1/4"	4-1/2"
		2-3/4"	phillips	flat		ELG948*		1/4"	4-1/2"
		3-1/4"	phillips	flat		ELG960*		1/4"	4-1/2"
		4"	phillips	flat		ELG979*		1/4"	5-1/2"
		5"	phillips	flat		ELG992*		1/4"	7-1/2"
		6"	phillips	flat		ELG998*		1/4"	7-1/2"



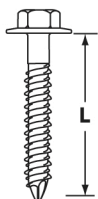


NOTE: All anchors are packed 100/box with tanged drill bit, unless packed bulk as indicated with \*.

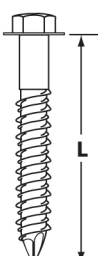
## Anchor Selection Guide

	Dia.	L Length	Drive System	Head Style	Catalog Number			Tanged Bit	
					Blue	Silver	White	Dia.	Length

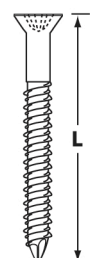
### Hex Flange Head

	1/4"	1-3/4"	hex	hex flange		ELC145*	ELD275*	3/16"	3-1/2"
		2-1/4"	hex	hex flange		ELC151*	ELD285*	3/16"	4-1/2"
		2-3/4"	hex	hex flange		ELC160*	ELD295*	3/16"	4-1/2"
		3-1/4"	hex	hex flange		ELC170*	ELD305*	3/16"	5-1/2"

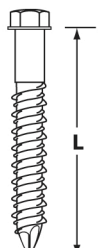
### Hex Head with Oversized Washer

	5/16"	1-3/4"	hex	hex w/oversized washer		ELG481*		1/4"	4-1/2"
		2-1/4"	hex	hex w/oversized washer		ELG486*		1/4"	4-1/2"
		2-3/4"	hex	hex w/oversized washer		ELG491*		1/4"	4-1/2"
		3-1/4"	hex	hex w/oversized washer		ELG496*		1/4"	5-1/2"
		3-3/4"	hex	hex w/oversized washer		ELG501*		1/4"	5-1/2"
		4"	hex	hex w/oversized washer		ELG506*		1/4"	5-1/2"
		5"	hex	hex w/oversized washer		ELG511*		1/4"	7-1/2"
	6"	hex	hex w/oversized washer		ELG516*			1/4"	7-1/2"

### TrimFit® Flat Head

	1/4"	1-3/4"	phillips	TrimFit® flat		ELG771*	ELD400*	3/16"	3-1/2"
		2-1/4"	phillips	TrimFit® flat		ELG801*	ELD410*	3/16"	4-1/2"
		2-3/4"	phillips	TrimFit® flat		ELG831*	ELD420*	3/16"	4-1/2"
		3-1/4"	phillips	TrimFit® flat		ELG861*	ELD430*	3/16"	5-1/2"
		3-3/4"	phillips	TrimFit® flat		ELG921*	ELD440*	3/16"	5-1/2"
	5/16"	2-1/4"	phillips	TrimFit® flat		ELG945*		1/4"	4-1/2"
		2-3/4"	phillips	TrimFit® flat		ELG955*		1/4"	4-1/2"
		3-1/4"	phillips	TrimFit® flat		ELG965*		1/4"	5-1/2"
		3-3/4"	phillips	TrimFit® flat		ELG972*		1/4"	5-1/2"
		4"	phillips	TrimFit® flat		ELG976*		1/4"	5-1/2"
		5"	phillips	TrimFit® flat		ELG991*		1/4"	7-1/2"

### TrimFit® Hex Head

	5/16"	1-3/4"	hex	TrimFit® hex		ELG482*		1/4"	4-1/2"
		2-1/4"	hex	TrimFit® hex		ELG487*		1/4"	4-1/2"
		2-3/4"	hex	TrimFit® hex		ELG492*		1/4"	4-1/2"
		3-1/4"	hex	TrimFit® hex		ELG497*		1/4"	5-1/2"
		3-3/4"	hex	TrimFit® hex		ELG502*		1/4"	5-1/2"





Mechanical Properties

Nom. Dia.	Thread O.D. Nom.	Thread I.D. Nom.	Unthreaded Shank Nom.	Material	Heat Treatment	fy† (Tensile Yield)	fu† (Tensile Ultimate)
3/16	.210	.123	.146	1022 carbon steel	Case hardened (HRC 52 min. with core hardness of HRC 32 – 40 max.)	155 K.S.I.	177 K.S.I.
1/4	.255	.161	.189				
5/16	.315	.210	.236				

† Values listed are based on numerous tests with all three diameters of UltraCon® fasteners. Testing was done per ASTM E8-96 standards. The yield and ultimate tensile values shown are indicative of the hardness levels obtained.

Performance Data

Hollow Block 1,924 PSI					Concrete 2,730 PSI				Wood			
Dia.	Depth of Embedment	Edge Distance	Pull-out	Shear	Depth of Embedment	Edge Distance	Pull-out	Shear	Depth of Embedment	Edge Distance	Pull-out	Shear
3/16"	1-1/4"	1"	421	546	1"	1"	422	692	–	–	–	–
					1-3/8"		884	782	–	–	–	–
					1-3/4"		1,096	856	–	–	–	–
		2-1/2"	427	575	1"	2-1/2"	444	639	–	–	–	–
					1-3/8"		750	866	–	–	–	–
					1-3/4"		1,271	781	–	–	–	–
1/4"	1-1/4"	1"	998	900	1"	1"	668	632	–	–	–	–
					1-3/8"		1,166	1,070	–	–	–	–
					1-3/4"		1,857	919	–	–	–	–
		2-1/2"	709	1,486	1"	2-1/2"	809	1,153	–	–	–	–
					1-3/8"		1,507	1,583	–	–	–	–
					1-3/4"		1,908	1,780	–	–	–	–
Hollow Block 1,872 PSI					Concrete 3,513 PSI				Wood #2 SYP Specific Gravity .55			
5/16"	1-1/4"	1- 9/16"	1,049	708	1"	1-1/4"	737	879	1"	5d	1,423	1,095
					1-3/4"		2,105	1,324	1-1/2"		2,471	1,617
					1"		2-3/16"	836	1,500		2"	2,912
		3-1/8"	1,149	1,454	1-3/4"	2-3/16"	2,413	3,158	–	–	–	–
					1"	3-1/8"	851	1,801	1"	10d	1,454	1,188
					1-3/4"		2,643	3,404	1-1/2"		2,472	1,677
					2"		3,347	–	2"		3,233	2,407

NOTE: Indicated pull-out and shear failure values were obtained in tests witnessed by independent test labs (see below). These figures are offered only as a guide and are not guaranteed in any way by Elco Construction Products. A safety factor of 4:1, or 25% of ultimate pull-out value, is generally accepted as a safe working load; however, reference should always be made to applicable codes for the specific safe working ratio.

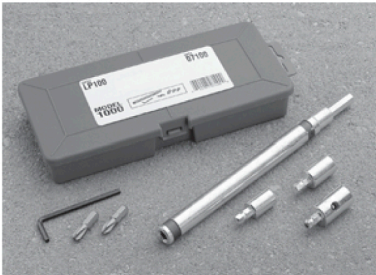
Test report cross-reference information

Concrete		Block		Wood		* Testing by Hurricane Engineering & Testing, Inc. (HETI).  Additional testing has been done in other materials and conditions and is available upon request.
UltraCon® Dia.	Test report no.*	UltraCon® Dia.	Test report no.*	UltraCon® Dia.	Test report no.*	
3/16"	HETI 03-1127	3/16"	HETI 05-1501	3/16"	–	
1/4"	HETI 03-1136	1/4"	HETI 03-1159	1/4"	–	
5/16"	HETI 01-5013	5/16"	HETI 01-5069	5/16"	HETI 01-5063	



ULTRACON® INSTALLATION TOOLS

1000 Tool Cat. No. ELP 100

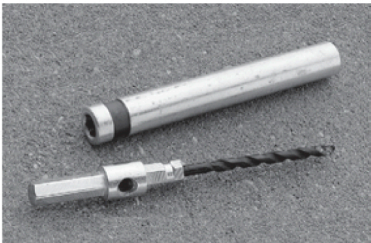


The 1000 installation tool is a two-step, multi-purpose tool for use in installing all sizes and styles of UltraCon® masonry fasteners.

1000 Tool Components/Replacement Parts

Cat No.	Description	Cat No.	Description
ELY 100	Drill Adapter	ELY 140	#2 Phillips Bit
ELY 110	Drive Sleeve Assembly	ELY 150	#3 Phillips Bit
ELY 120	5/16" Hex Driver – Magnetic	ELY 220	1/8" Hex Key
ELY 130	1/4" Hex Socket for 3/16" Anchor	ELY 210	Set Screw 1/4-28
ELY 160	Phillips Adapter	ELY 170	Drive Sleeve Assembly for 5" & 6" Anchors

Specialty Tool Cat. No. ELP 150



This tool permits high-volume installations of 1/4" diameter hex washer head UltraCon® anchors, up through 1-3/4" in length. Intended for use with hammer drills.

Specialty Tool Components/Replacement Parts

Cat No.	Description
ELP 155	Drive Sleeve
ELT 630	Hex-collared Carbide-Tipped SDS Bit
ELY100	Drill Adapter

Economy Tool Cat. No. ELP 250



This simplified design permits quick, economical, two-step installation of UltraCon® fasteners up to 4" in length.

Economy Tool Components/Replacement Parts

Cat No.	Description
ELY 100	Drill Adapter
ELY 140	#2 Phillips Bit
ELY 150	#3 Phillips Bit
ELY 220	1/8" Hex Key
ELY 125	1/4" Hex Drive Adapter

GENUINE ELCO® DRILL BITS

Tanged Drill Bits



For use with hammer drill guns. Sold in tubes containing 10 bits each.

Diameter	Length	Catalog No.
5/32"	3-1/2"	ELT300
	4-1/2"	ELT310
	5-1/2"	ELT320
3/16"	3-1/2"	ELT405
	4-1/2"	ELT415
	5-1/2"	ELT425
	6-1/2"	ELT435
	7-1/2"	ELT445
1/4"	4-1/2"	ELT460
	5-1/2"	ELT465
	7-1/2"	ELT475

Hex-collared SDS Carbide-tipped Drill Bits



For use with with rotary hammer drills and 1000 tool or specialty installation tools. Packaged one per tube, 10 tubes per shipper.

Diameter	Overall Length	Functional Length	Catalog No.
5/32"	5"	2"	ELT535
	7"	4"	ELT555
3/16"	5"	2"	ELT630
	7"	4"	ELT650