



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.

Superior Resistance to Corrosion

UltraCon fasteners from 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 1000 hours of 5% neutral salt spray exposure (ASTM B117).

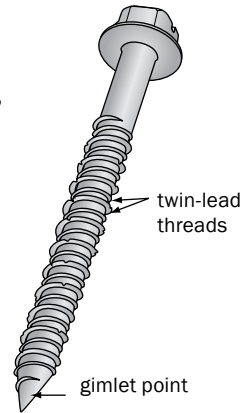
Experience Matters

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.



Features

- Twin-lead threads
- Available in 3/16", 1/4" and 5/16" diameters, in a variety of lengths
- Head Styles: Hex washer, flat, hex flange, TrimFit® hex and TrimFit flat
- Drive Systems: Hex and phillips
- New 5/16" diameter door frame anchor features an oversized flat head
- Blue Stalgard corrosion-resistant finish standard; silver, white or bronze Stalgard finish also available on selected sizes. Stalgard finish provides 1600 hours of salt spray resistance per ASTM B117.
- 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. 11-0406.01

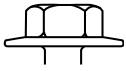


Head Styles



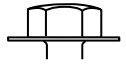
Slotted Hex Washer Head

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



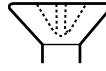
Hex Flange Head

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 head 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 a 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

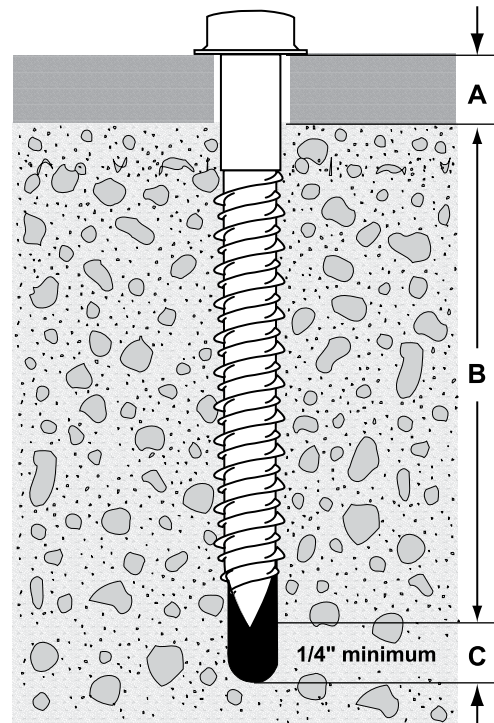
The diameter of the drilled hole is also important to the performance of the UltraCon masonry fastening system. To provide the proper hole diameters, Elco carbide-tipped drill bits are manufactured to closer standards than those called for in the American National Standard. Using Elco carbide-tipped 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	



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

Dia.	Hollow Block 1,924 PSI				Concrete 2,730 PSI				Wood				
	Depth of Embed.	Edge Dist.	Pull-out	Shear	Depth of Embed.	Edge Dist.	Pull-out	Shear	Depth of Embed.	Edge Dist.	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	-	-	-	-	
Dia.	Hollow Block 1,872 PSI				Concrete 3,513 PSI				Wood #2 SYP Specific Gravity .55				
	Depth of Embed.	Edge Dist.	Pull-out	Shear	Depth of Embed.	Edge Dist.	Pull-out	Shear	Depth of Embed.	Edge Dist.	Pull-out	Shear	
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"		836	1,500	2"		2,912	2,367	
		3-1/8"	1,149	1,454	1-3/4"	2-3/16"	2,413	3,158	-	-	-	-	-
					1"	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	
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

* Testing by Hurricane Engineering & Testing, Inc. (HETI).

Additional testing has been done in other materials and conditions and is available upon request.



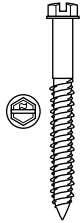
UltraCon® Masonry Fastening System

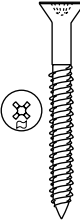
Boxed Anchors

100 anchors and 1 tanged drill bit per box; 6 boxes per carton.

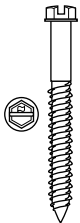
Boxed Anchors

100 anchors and 1 tanged drill bit per box; 6 boxes per carton.

	Cat. No.		Size	Drive System	Quantity Per Shipper	Weight Per Shipper
	Blue Stalgard					
Slotted Hex Washer Head						
	HFLE300-100		3/16 x 1-1/4"	5/16 hex with slot	600	5
	HFLE310-100		3/16 x 1-3/4"	5/16 hex with slot	600	7
	HFLE320-100		3/16 x 2-1/4"	5/16 hex with slot	600	8
	HFLE330-100		3/16 x 2-3/4"	5/16 hex with slot	600	10
	HFLE340-100		3/16 x 3-1/4"	5/16 hex with slot	600	11
	HFLE350-100		3/16 x 3-3/4"	5/16 hex with slot	600	13
	HFLE360-100		3/16 x 4"	5/16 hex with slot	600	13
	HFLE400-100		1/4 x 1"	5/16 hex with slot	600	8
	HFLE405-100		1/4 x 1-1/4"	5/16 hex with slot	600	9
	HFLE415-100		1/4 x 1-3/4"	5/16 hex with slot	600	12
	HFLE425-100		1/4 x 2-1/4"	5/16 hex with slot	600	14
	HFLE435-100		1/4 x 2-3/4"	5/16 hex with slot	600	16
	HFLE445-100		1/4 x 3-1/4"	5/16 hex with slot	600	19
	HFLE455-100		1/4 x 3-3/4"	5/16 hex with slot	600	21
	HFLE465-100		1/4 x 4"	5/16 hex with slot	600	22
	HFLE475-100		1/4 x 5"	5/16 hex with slot	100	5
HFLE485-100		1/4 x 6"	5/16 hex with slot	100	6	

Phillips Flat Head						
	HFLF305-100		3/16 x 1-1/4"	#2 phillips	600	4
	HFLF315-100		3/16 x 1-3/4"	#2 phillips	600	6
	HFLF325-100		3/16 x 2-1/4"	#2 phillips	600	7
	HFLF335-100		3/16 x 2-3/4"	#2 phillips	600	9
	HFLF345-100		3/16 x 3-1/4"	#2 phillips	600	10
	HFLF355-100		3/16 x 3-3/4"	#2 phillips	600	12
	HFLF365-100		3/16 x 4"	#2 phillips	600	13
	HFLF400-100		1/4 x 1-1/4"	#3 phillips	600	8
	HFLF410-100		1/4 x 1-3/4"	#3 phillips	600	10
	HFLF420-100		1/4 x 2-1/4"	#3 phillips	600	12
	HFLF430-100		1/4 x 2-3/4"	#3 phillips	600	14
	HFLF440-100		1/4 x 3-1/4"	#3 phillips	600	16
	HFLF450-100		1/4 x 3-3/4"	#3 phillips	600	18
	HFLF460-100		1/4 x 4"	#3 phillips	600	19
	HFLF470-100		1/4 x 5"	#3 phillips	100	4
	HFLF480-100		1/4 x 6"	#3 phillips	100	5

Bulk Anchors

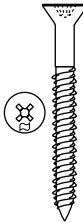
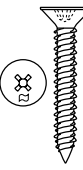
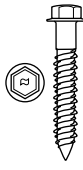
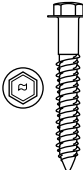
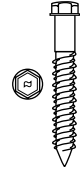
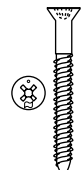
	Cat. No.		Size	Drive Size	Quantity Per Case	Weight Per Case
	Silver Stalgard	White Stalgard				
Slotted Hex Washer Head						
	HFLG341	HFLD195	1/4 x 1-3/4"	5/16 hex with slot	2,000	38
	HFLG371	HFLD205	1/4 x 2-1/4"	5/16 hex with slot	1,500	34
	HFLG401	HFLD215	1/4 x 2-3/4"	5/16 hex with slot	1,000	27
	HFLG431	HFLD225	1/4 x 3-1/4"	5/16 hex with slot	1,000	31
	-	HFLD235	1/4 x 3-3/4"	5/16 hex with slot	500	16
	-	HFLD255	1/4 x 5"	5/16 hex with slot	500	22
	-	HFLD265	1/4 x 6"	5/16 hex with slot	500	26

continued on next page



UltraCon® Masonry Fastening System

Bulk Anchors. continued

	Cat. No.		Size	Drive Size	Quantity Per Case	Weight Per Case
	Silver Stalgard	White Stalgard				
Phillips Flat Head						
	HFLG521	HFLD320	3/16 x 1-1/4"	#2 phillips	5,000	35
	HFLG551	HFLD330	3/16 x 1-3/4"	#2 phillips	3,000	28
	HFLG581	HFLD340	3/16 x 2-1/4"	#2 phillips	2,500	29
	HFLG611	HFLD350	3/16 x 2-3/4"	#2 phillips	1,500	21
	HFLG641	HFLD360	3/16 x 3-1/4"	#2 phillips	1,000	16
	HFLG671	HFLD370	3/16 x 3-3/4"	#2 phillips	1,000	19
	-	HFLD380	3/16 x 4"	#2 phillips	1,000	12
	HFLG941	-	5/16 x 2-1/4"	#3 phillips	1,000	34
	HFLG948	-	5/16 x 2-3/4"	#3 phillips	1,000	41
	HFLG960	-	5/16 x 3-1/4"	#3 phillips	500	24
	HFLG979	-	5/16 x 4"	#3 phillips	500	29
	HFLG992	-	5/16 x 5"	#3 phillips	500	16
	HFLG998	-	5/16 x 6"	#3 phillips	500	21
Phillips Oversized Flat Head – Door Frame Anchor						
	HFLG203		5/16 x 3"	#3 phillips	500	22
	HFLG204		5/16 x 4"	#3 phillips	500	29
	HFLG205		5/16 x 5"	#3 phillips	250	16
	HFLG206		5/16 x 6"	#3 phillips	250	21
Hex Flange Head (5/8" O.D.)						
	HFLC145	HFLD275	1/4 x 1-3/4"	5/16 hex	1,500	36
	HFLC151	HFLD285	1/4 x 2-1/4"	5/16 hex	1,000	28
	HFLC160	HFLD295	1/4 x 2-3/4"	5/16 hex	1,000	32
	HFLC170	HFLD305	1/4 x 3-1/4"	5/16 hex	500	18
Hex Head with Oversized Washer (.540" O.D.)						
	HFLG481	-	5/16 x 1-3/4"	5/16 hex	1,000	30
	HFLG486	-	5/16 x 2-1/4"	5/16 hex	1,000	37
	HFLG491	-	5/16 x 2-3/4"	5/16 hex	800	22
	HFLG496	-	5/16 x 3-1/4"	5/16 hex	500	25
	HFLG501	-	5/16 x 3-3/4"	5/16 hex	500	29
	HFLG506	-	5/16 x 4"	5/16 hex	500	30
	HFLG511	-	5/16 x 5"	5/16 hex	250	18
	HFLG516	-	5/16 x 6"	5/16 hex	250	22
TrimFit Hex Head (.415 nom. washer O.D.)						
	HFLG482	-	5/16 x 1-3/4"	5/16 hex	1,500	44
	HFLG487	-	5/16 x 2-1/4"	5/16 hex	1,000	36
	HFLG492	-	5/16 x 2-3/4"	5/16 hex	1,000	43
	HFLG497	-	5/16 x 3-1/4"	5/16 hex	500	25
	HFLG502	-	5/16 x 3-3/4"	5/16 hex	500	28
TrimFit Flat (.415" nom. O.D.)						
	-	-	3/16 x 2-3/4"	#3 phillips	1,500	21
	HFLG771	HFLD400	1/4 x 1-3/4"	#3 phillips	2,000	32
	HFLG801	HFLD410	1/4 x 2-1/4"	#3 phillips	1,500	30
	HFLG831	HFLD420	1/4 x 2-3/4"	#3 phillips	1,000	24
	HFLG861	HFLD430	1/4 x 3-1/4"	#3 phillips	1,000	28
	HFLG891	HFLD440	1/4 x 3-3/4"	#3 phillips	500	16
	HFLG921	HFLD450	1/4 x 4"	#3 phillips	500	17
	HFLG945	-	5/16 x 2-1/4"	#3 phillips	1,500	47
	HFLG955	-	5/16 x 2-3/4"	#3 phillips	1,000	38
	HFLG965	-	5/16 x 3-1/4"	#3 phillips	500	22
	HFLG972	-	5/16 x 3-3/4"	#3 phillips	500	26
	HFLG976	-	5/16 x 4"	#3 phillips	500	27
	HFLG991	-	5/16 x 5"	#3 phillips	250	17



Installation Tools

1000 Tool Cat. No. ELP 100



The 1000 installation tool is a two-step, multi-purpose tool for installing all styles of 1/4" and 3/16" diameter UltraCon masonry fasteners.

Carbide-Tipped Drill Bits

Drill Bit Diameter	For Anchor Size
5/32"	3/16"
3/16"	1/4"
7/32"	5/16"

Tool Kit Includes:

	Elco Cat. No.	Description	Qty.
	ELY100	Drill Adapter	1
	ELY110	Drive Sleeve Assembly	1
	ELY120	5/16" Hex Socket	1
	ELY125	1/4" Hex Drive Socket for 1/4" Anchor	1
	ELY130	1/4" Hex Drive Socket for 3/16" Anchor	1
	ELY140	#2 Phillips Bit	1
	ELY150	#3 Phillips Bit	1
	ELY160	Phillips Bit Holder	1
	ELY210	Set Screw	1
	ELY220	1/8" Hex Key	1

Hurripanel Fasteners offers a wide assortment of carbide-tipped drill bits. See our website for more information.

Also available:

	ELY170	8" Drive Sleeve Assembly for 5" and 6" UltraCon Anchors	1
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