

5/16" Diameter UltraCon® Fasteners For More Demanding Applications

Now, the proven performance of the UltraCon® masonry fastening system is available in a 5/16" diameter fastening system. The larger diameter provides significantly higher shear and tensile strength to meet the needs of more demanding applications in concrete, block and even wood. Dependent on anchoring conditions and materials, the increase in connection strength, when compared to the 1/4" anchor, can typically be as high as 60-65%. Applications include:

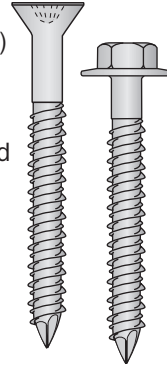
- metal door frames
- window frames
- hurricane shutter systems
- cable trays
- shelving & racking
- pipe supports

Installations are fast; just drill and drive! The 5/16" UltraCon® system utilizes a standard 1/4" ANSI drill bit for the required pilot hole.

For maximum corrosion resistance, 5/16" UltraCon® fasteners have the industry-respected Stalgard corrosion resistant finish. It delivers superior corrosion resistance and is available in silver, white and bronze.

Drive/Head Styles:

- 5/16" hex washer head with oversized washer O.D. (.540" nominal)
- #3 phillips flat head
- #3 phillips TrimFit® flat head (undersized - .415" O.D. nominal)
- 5/16" TrimFit hex head (smaller washer O.D. - .415" nominal)



Finish

- Silver, white or bronze Stalgard® corrosion-resistant finish
- 800 to 1,000 hours without red rust (per ASTM B117)

Packaging

- Bulk; quantity per carton is length dependent (masonry drill bits not included)

Approvals

- Miami-Dade NOA No. 07-0425.01 Exp. 01-08-2011

Pull-Out and Shear Values

Anchor Dia,	Hollow Block 1,872 PSI				Concrete 3,513 PSI				Wood #2 SYP .55 S.G.				
	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	1-3/4	1,149	1,454	1	2-3/16	2,413	3,158	-		1,454	1,188
						1-3/4		851	1,801	1	10d	2,472	1,677
						2	2,643	3,404	1-1/2	3,233		2,407	
	2		3,347	-	2								

Note: Indicated pull-out and shear values listed were obtained in tests conducted at an independent test lab. These figures are ultimate values and 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 the ultimate value is generally an accepted practice for safe working loads; in addition, based on actual anchoring conditions, additional reduction factors may be advisable. It is always recommended to have a Professional Engineer review the anchoring conditions for long-term and safe connections. In addition, reference should always be made to applicable building codes for the specific safe allowable loads. Testing was conducted by Hurricane Engineering and Testing, Inc. (HETI) Miami, FL.

For more information,
 please contact:



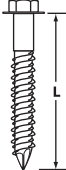
Elco Construction Products

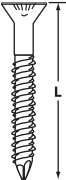
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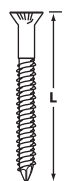
Overview
5/16" UltraCon® Masonry Fastening System

5/16" ULTRACON ANCHOR SELECTION GUIDE

L	Drive			Catalog Number	Tanged Bit	
	Length	System	Head Style		Dia	Length
	1-1/4"	hex	w/oversized washer	ELG476	1/4"	4-1/2"
	1-3/4"	hex	w/oversized washer	ELG481	1/4"	4-1/2"
	2-1/4"	hex	w/oversized washer	ELG486	1/4"	4-1/2"
	2-3/4"	hex	w/oversized washer	ELG491	1/4"	4-1/2"
	3-1/4"	hex	w/oversized washer	ELG496	1/4"	5-1/2"
	3-3/4"	hex	w/oversized washer	ELG501	1/4"	5-1/2"
	4"	hex	w/oversized washer	ELG506	1/4"	5-1/2"
5"	hex	w/oversized washer	ELG511	1/4"	7-1/2"	

L	Drive Length	Head System	Head Style	Catalog Number	Dia	Length
	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"

L	Drive Length	Head System	Head Style	Catalog Number	Dia	Length
	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"

L	Drive Length	Head System	Head Style	Catalog Number	Dia	Length
	1-1/4"	phillips	TrimFit® flat	ELG925	1/4"	4-1/2"
	1-3/4"	phillips	TrimFit® flat	ELG935	1/4"	4-1/2"
	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"

INSTALLATION

The 5/16 UltraCon® masonry fastening system consists of three components: the UltraCon® fastener, Elco® 1/4" carbide tipped masonry drill bit, and the 516 UltraCon® installation tool (ELP400). Consistent performance and maximum connection strengths can be assured only when all three elements of the system are properly used.

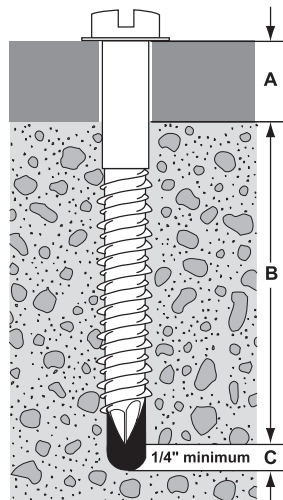
Fastener Length: The proper length of 5/16" UltraCon® fastener to be used is determined by combining the thickness of the fixture (A) being attached with the desired depth of embedment into the concrete or masonry material (B). A minimum of 1" and a maximum of 2" embedment is recommended when determining which fastener length to use.

A = fixture thickness
 B = Ultracon® embedment (min. of 1", max. of 2")
 A + B = Ultracon® fastener length
 B + C = hole depth (must be at least 1/4" deeper than Ultracon® embedment)

Hole Depth: To determine the proper hole depth, combine the total thickness of the fixture (A) and the fastener length (B) and add an additional 1/4" to 1/2". Inadequate hole depth can cause the fastener to "bottom-out" before it fully seats. Normal precautions should be observed when drilling to avoid electrical lines and other utilities.

Hole Diameter: The proper hole diameter is critical to the 5/16" UltraCon® performance. Elco supplies both 1/4" tanged masonry drill bits (for use with hammer drills) and 1/4" hex-shanked SDS bits (for use with rotary hammer drills). Elco® bits are sized per ANSI B-121 15-1994 specifications.

Note: It is recommended that rotary hammer drills NOT be used in hollow block applications; excessive spalling can occur due to the rotary hammer's enhanced percussion characteristics resulting in a reduced cross-sectional area available for thread engagement.



Mechanical Properties

Material: 1022 carbon steel

Heat Treatment: Case hardened (HRC 52 min. with core hardness of HRC 32 – 40 max.)

Mechanical Properties*:

- fy (Tensile Yield): 155 K.S.I.
- fu (Tensile Ultimate): 177 K.S.I.

Fastener Dimensions:

- Thread O.D. (Major Diameter): .315"
- Thread I.D. (Minor Diameter): .210"
- Unthreaded Section (Shank Diameter): .236"

Masonry Drill Bit:

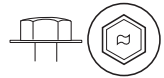
1/4" (per ANSI specs) .268" (+.000/-.008")

* Values listed for mechanical strengths 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.

Drive & Head Dimensions:

Hex Heads

- Hex Washer Head: 5/16" hex drive; washer OD .540" nom.
- TrimFit® Hex Head: 5/16" hex drive; washer OD .435" nom.



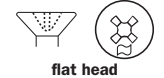
hex washer head



TrimFit® hex head

Flat Heads

- Phillips Flat Head: # 3 phillips drive; head OD .540" Nom.
- TrimFit Flat Head: #3 phillips drive; head OD .415" nom.



flat head



TrimFit® flat head

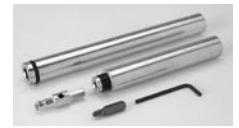
Identification

The Elco® marking for hex, hex flange, phillips flat and TrimFit® heads consists of the Elco logo as shown to the right. The TrimFit® head has two dots opposite the logo to distinguish it from the standard flat head design.

Installation Tools

516 Drive Tool

The 516 tool (ELP400) is a two step installation tool for use with all drive styles and lengths of 5/16" Ultracon® fasteners. The standard 6" sleeve will install fasteners up to 4" long. For 5" and 6" long Ultracon® fasteners, an 8" sleeve is required.



ELP400: 516 SPECIALTY TOOL COMPONENTS/REPLACEMENT PARTS

- ELY400 516 drill bit adapter
- ELY450 #3 phillips bit
- ELY410 6" drive sleeve
- Also available: ELY470 8" drive sleeve

Tanged Drill Bits

(for use with hammer drill)



Description	Catalog #
1/4 X 4-1/2"	ELT460
1/4 X 5-1/2"	ELT465
1/4 X 7-1/2"	ELT475

Hex-shanked SDS Bits

(for use with rotary hammer drill)



Description	Functional Length	Catalog #
1/4 X 6-3/4"	4"	ELT680
1/4 X 9-1/4"	6-1/2"	ELT690