



Innovative Fastening Technologies

Flex Technology | Metal Fastening Systems | Concrete Anchoring Systems | Building Protection

2016 Construction Products Catalog

Specializing in the Attachment of:
Curtain Wall & Glazing, Metal Structures,
Hurricane Panels & Shutters and Overhead Anchoring



FLEX TECHNOLOGY

The Leader In Fastening Curtain Wall-Glazing Applications For 30+ Years

- Proprietary heat treating process resists hydrogen assisted corrosion cracking (HascC)
- Innovative STALGARD® coating for superior corrosion resistance.
- Approved and recognized by ICC and LARR
- Elco offers a complete line of "Flex" products to fit a number of applications.
- Special lengths and diameters available upon request
- Call for a free demonstration or full color brochure.

Let us show you how to do it right the first time!

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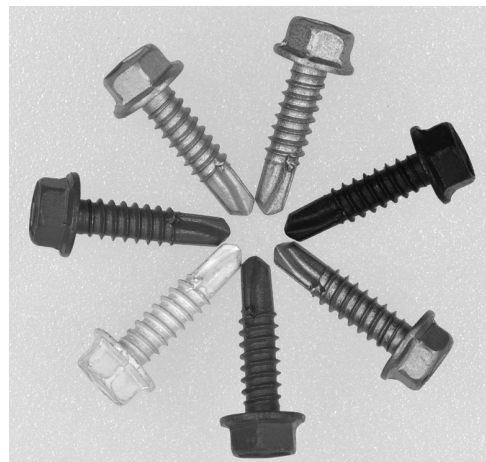


Stalgard® High-Performance Protective Coatings

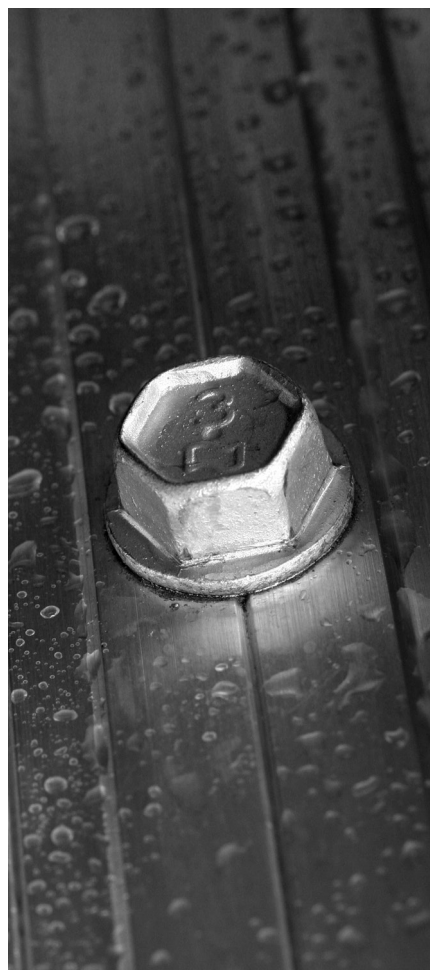
Provide consistent, high corrosion resistance in construction applications

Stalgard® durable, multi-layer, corrosion-resistant coatings are engineered to provide optimal performance in demanding construction applications. These environmentally-friendly finishes are free of chromates and silicates and any process, like electroplating, that might induce hydrogen embrittlement, preventing structural failures.

- Maximizes fastener performance
- Salt spray at 1000+ hours with no red rust per ASTM B117
- Uniform thickness
- Low coefficient of friction – eliminates the need for post-coating lubricants to ease installation
- Does not use processes that introduce hydrogen – will not cause brittle failures like those caused by electroplating
- Durable tough finish – doesn't come off during handling or repeated installations
- Clean and dry – no oily residue
- Eliminates the plating process, resulting in a more environmentally-friendly product than those with plated zinc or other finishes
- Blue, grey, and white Stalgard are ACQ-compatible
- Maintains drilling and tapping performance



RoHS compliant
(chrome-free)



Stalgard Coating for Induction Heat-Treated Fasteners

Proven, outstanding corrosion resistance for most

construction applications, including metal and wood

Salt spray resistance: 1000 hours per ASTM B117

Available colors: silver, black, blue, white, yellow, gray and brown



Stalgard GB (Galvanic Barrier) Coating

Standard on all Elco stainless steel fasteners

Prevents a galvanic reaction between the stainless steel and dissimilar application materials, which could lead to fastener and/or joint failure

Available color: Silver



Stalgard SUB Ultimate Barrier Coating

For more severely-corrosive environments

Salt spray 2,000 hours per ASTM B117

Available color: Silver



Drill Screws

Technical Information

Ultimate Strength Values†

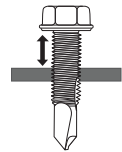
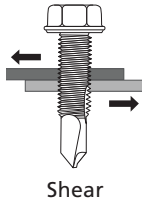
Carbon Steel, Case Hardened Product

Size	Tensile Lbs. Min.	Shear Avg. Lbs. Ult.	Torque Min. In-Lbs.
8-18	1,615	1,100	42
8-32	1,890	1,228	48
10-16	2,200	1,470	61
10-24	2,362	1,535	65
12-14	2,950	1,960	92
12-24	3,400	2,275	100
1/4-14	3,850	2,580	150
1/4-20	4,276	2,860	168
5/16-12	7,650	5,100	250
5/16-18	8,903	5,247	438
11/32-12	8,550	5,700	400
23/64-12	9,150	6,100	425

Shear Values†

(Average Lbs. Ultimate)

Desc.	Pt.	Gauge								0.125 (1/8")
		26	24	22	20	18	16	14	12	
8-18	2	301	500	542	742	1,049	—	—	—	—
10-16	1	403	585	673	883	1,330	—	—	—	—
10-16	3	—	461	524	731	1,254	1,524	1,674	—	—
12-14	1	437	718	763	1,030	1,548	—	—	—	—
12-14	2	370	607	622	860	1,360	1,690	2,112	2,212	—
12-14	3	—	—	—	775	1,361	1,624	1,974	1,993	—
12-24	4	—	—	—	—	—	1,430	1,930	2,455	2,573
12-24	4.5	—	—	—	—	—	1,389	1,920	2,174	2,257
12-24	5	—	—	—	—	—	1,351	1,825	2,152	2,226
1/4-14	1	519	863	892	1,301	1,771	—	—	—	—
1/4-14	3	—	—	—	930	1,447	2,102	2,584	2,650	—
1/4-20	5	—	—	—	—	—	1,655	2,277	—	3,210



Ultimate Average Fastener Pull-Out Values† (Lbs.)

Descrip.	Point Type	Material Thickness												
		26 Ga.	24 ga.	22 Ga.	20 Ga.	18 Ga.	16 Ga.	14 Ga.	12 Ga.	.120"	3/16"	1/4"	5/16"	3/8"
8-18	2	120	197	268	301	494	702	961	1,615	—	—	—	—	—
10-16	1	151	242	315	361	565	826	1,092	1,791	—	—	—	—	—
10-16	3	130	206	272	303	498	702	970	1,495	—	—	—	—	—
12-14	1	161	260	332	394	640	920	1,262	1,940	—	—	—	—	—
12-14	2	154	247	286	379	609	852	1,186	1,863	2,345	—	—	—	—
12-14	3	142	214	296	349	580	767	1,078	1,553	1,956	—	—	—	—
12-24	5	—	—	—	311	452	1,060	1,288	1,844	2,205	3,237	—	—	—
1/4-14	1	228	342	432	571	801	1,169	—	—	—	—	—	—	—
1/4-14	3	150	238	301	340	702	891	1,162	1,798	2,120	—	—	—	—
1/4-20	3	—	—	—	337	571	1,232	1,525	2,212	2,447	4,066	—	—	—
1/4-20	5	—	—	—	—	—	—	—	—	3,431	4,801	5,261	—	—
5/16-12	3 (.260 dia.)	—	—	—	491	706	1,609	1,707	2,831	2,915	3,745	—	—	—
5/16-18	3 (.290 dia.)	—	—	—	457	568	1,209	1,712	2,422	2,601	3,716	5,122	5,288	—
14-10 SS	A	270	363	426	459	657	1,194	1,368	—	—	—	—	—	—
1/4-14 SS	B	216	344	383	411	571	686	983	1,698	2,242	2,693	3,695	3,746	3,484

NOTE: SS = Stainless Steel; CS = Carbon Steel

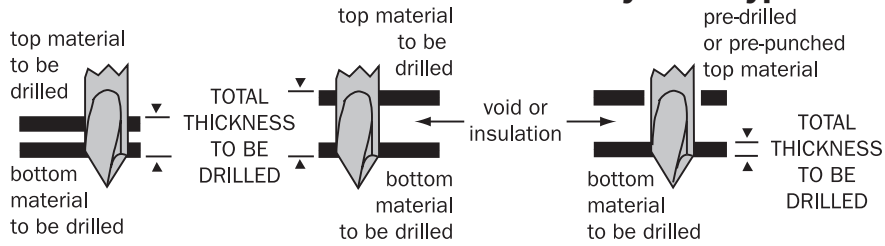
†**NOTE:** Test values shown are ultimate average values obtained under laboratory conditions and apply to fasteners manufactured by Elco Construction Products only.

NOTE: All performance data shown is based on tests performed under laboratory conditions at independent construction testing facilities. The appropriate safety factor should be applied and code requirements factored into specification and use of these fasteners. A safety factor of 4:1 or 25% of the ultimate average values shown is generally accepted as an appropriate working load. Final determination of the appropriate safety factor and use of these fasteners is the sole responsibility of the user, specifying Engineer, Architect or other responsible person designing the connection. Due to a wide variety of application conditions or intervening factors not under our control, we assume no liability for the use of the information provided in this document.

For additional product information and technical assistance, please contact Elco directly at 1-800-435-7213.

ELCO **Drill Screws**
Technical Information
Point Size Selection

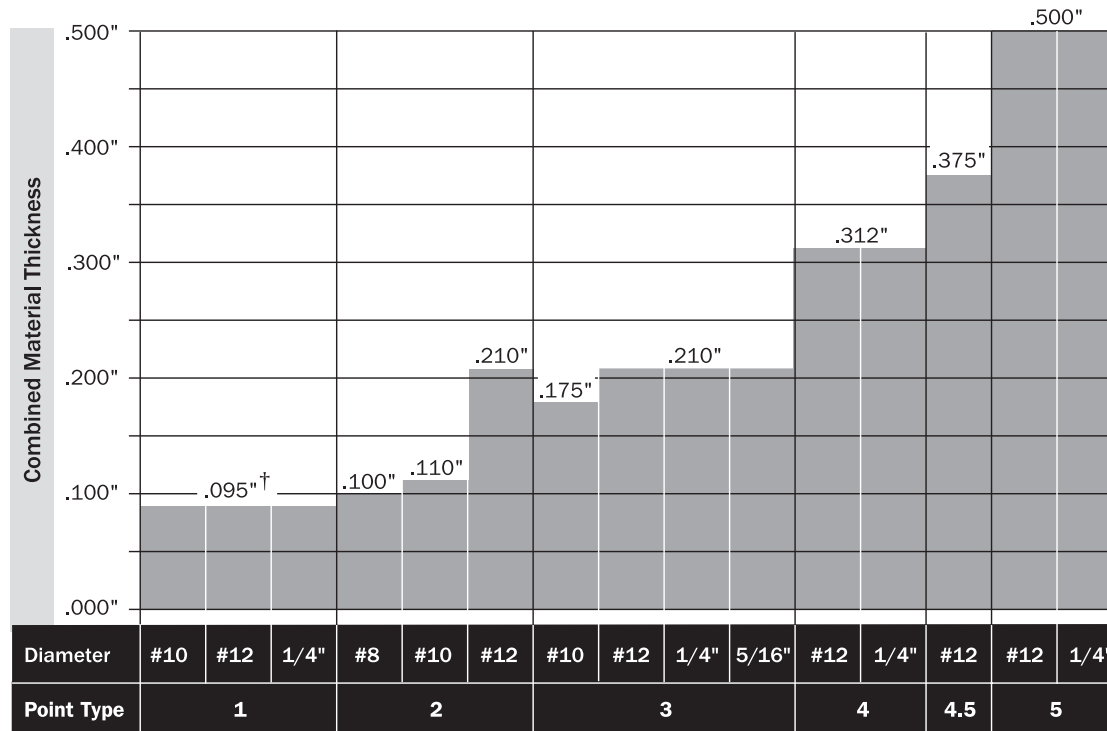
Maximum Combined Material Thickness By Point Type



Recommended Installation RPM

Diameter	RPM
#8	2500
#10	
#12	1800
1/4"	
5/16"	1200

Drilling and Tapping Capacity (Maximum Material Thickness)*



*** NOTE:** Some drill and tap capacities may vary due to special features on some fasteners. Refer to product performance specifications for any individual fastener to confirm performance and capabilities.

Standard Sheet Metal Sizes

Gauge	Decimal
26	0.018
24	0.024
22	0.030
20	0.038
18	0.048
16	0.060
14	0.075
12	0.106

Nominal Screw Sizes

Thread Dia.	Decimal
#6	.140
#7	.150
#8	.160
#9	.180
#10	.190
#11	.200
#12	.210
1/4	.240
#14	.250

ICC Evaluation Report ESR-3294

NOTE: All performance data shown is based on tests performed under laboratory conditions at independent construction testing facilities. The appropriate safety factor should be applied and code requirements factored into specification and use of these fasteners. A safety factor of 4:1 or 25% of the ultimate average values shown is generally accepted as an appropriate working load. Final determination of the appropriate safety factor and use of these fasteners is the sole responsibility of the user, specifying Engineer, Architect or other responsible person designing the connection. Due to a wide variety of application conditions or intervening factors not under our control, we assume no liability for the use of the information provided in this document.

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Standard Drill Screws

Self-drilling fasteners in the most popular sizes



Self-drilling fasteners eliminate separate drilling and tapping operations for faster, more economical installations.

Specifications

- Diameters: #8 to 5/16"
- Lengths: 1/2" to 4"
- Drill Points: Drilit® forged or Drilitite® dual-processed
- Drive Systems: Hex and phillips
- Material: Carbon steel
- Finishes: Stalgard® coating or zinc

Features & Benefits

- Eliminates separate drilling and tapping operations
- 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 (per ASTM B117)

Catalog No.	Description	Point Type	Finish	Carton Quantity	Weight/Carton
#8 Diameter, 1/4" Hex Washer Head					
*EDA236-I	8-18 x 1/2"	#2 Drilit	Stalgard	10,000	36
*EDA261-I	8-18 x 3/4"	#2 Drilit	Stalgard	8,000	37
*EDA286-I	8-18 x 1"	#2 Drilit	Stalgard	5,000	27
#8 Diameter, #2 Phillips Pan Head					
*EDD251-I	8-18 x 1/2"	#2 Drilit	Stalgard	10,000	34
*EDD266-I	8-18 x 3/4"	#2 Drilit	Stalgard	10,000	44
EDD291	8-18 x 1"	#2 Drilit	Stalgard	8,000	43
#10 Diameter, 5/16" High Hex Washer Head					
EDB401	10-16 x 1/2"	#3 Drilit	Stalgard	5,000	31
EDB426	10-16 x 5/8"	#3 Drilit	Stalgard	6,000	45
EDB446	10-16 x 3/4"	#3 Drilit	Stalgard	6,000	47
*EFC460-I	10-16 x 3/4"	#3 Drilit	Zinc	6,000	47
EDC450	10-16 x 3/4"	#1 Drilit	Stalgard	5,000	39
EDB486	10-16 x 1"	#3 Drilit	Stalgard	5,000	46
EDB541	10-16 x 1-1/2"	#3 Drilit	Stalgard	3,000	35
EDB571	10-16 x 2"	#3 Drilit	Stalgard	2,000	29
#12 Diameter, 5/16" Hex Washer Head					
EDC745	12-14 x 3/4"	#1 Drilit	Stalgard	5,000	45
EDB741	12-14 x 3/4"	#3 Drilit	Stalgard	5,000	46
EDB761	12-14 x 1"	#3 Drilit	Stalgard	4,000	41
EDB782	12-14 x 1-1/4"	#3 Drilit	Stalgard	3,000	36
EDB801	12-14 x 1-1/2"	#3 Drilit	Stalgard	2,500	35
EDB821	12-14 x 2"	#3 Drilit	Stalgard	2,000	34
EDB840	12-14 x 3"	#3 Drilit	Stalgard	1,000	24
EDB845	12-14 x 4"	#3 Drilit	Stalgard	500	15
1/4" Diameter, 3/8" Hex Washer Head					
EDB936	1/4-14 x 3/4"	#3 Drilit	Stalgard	3,500	48
EDC930	1/4-14 x 7/8"	#1 Drilit	Stalgard	4,000	38
EDB946	1/4-14 x 1"	#3 Drilit	Stalgard	3,000	47
EDB956	1/4-14 x 1-1/4"	#3 Drilit	Stalgard	2,000	37
EDB961	1/4-14 x 1-1/2"	#3 Drilit	Stalgard	2,000	39
EDB971	1/4-14 x 2"	#3 Drilit	Stalgard	1,500	38
EDB981	1/4-14 x 3"	#3 Drilit	Stalgard	800	28
EDB983	1/4-14 x 4"	#3 Drilit	Stalgard	500	23

* denotes globally-sourced product.



Drilit® Drill Screws with Bonded Sealing Washers

Economical fasteners for applications requiring a weather-tight seal



This economical line of drill screws provides a weather-tight seal for protection against the elements.

Specifications

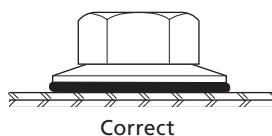
- Diameters: #10 to 1/4"
- Lengths: 3/4" to 4"
- Head Styles: Hex washer
- Drive System: Hex
- Point Types: #1 to #5
- Material: Carbon steel
- Finish: Stalgard® coating

Features & Benefits

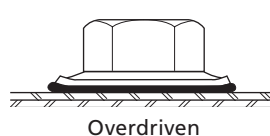
- EPDM washer material is UV- and heat-resistant for long-term protection against leakage
- Stalgard coating provides 1000 hours of salt spray resistance (per ASTM B117)

Catalog No.	Description	Point Type	Washer O.D.	Finish	Carton Quantity	Weight/Carton
#10 Diameter, 5/16" Hex Washer Head						
EHL111	10-16 x 3/4"	#3 Drilit	1/2"	Stalgard	3,000	31
EHL146	10-16 x 1-1/2"	#3 Drilit	1/2"	Stalgard	2,000	28
#12 Diameter, 5/16" Hex Washer Head						
EHL165	12-14 x 3/4"	#3 Drilit	9/16"	Stalgard	3,000	34
EHL351	12-24 x 7/8"	#4 Drilit	9/16"	Stalgard	2,500	31
EHL181	12-14 x 1"	#3 Drilit	9/16"	Stalgard	2,500	32
EHL235	12-14 x 1-1/4"	#3 Drilit	9/16"	Stalgard	2,000	27
EHL371	12-24 x 1-1/4"	#4.5 Drilit	9/16"	Stalgard	2,500	39
EHL276	12-14 x 1-1/2"	#3 Drilit	9/16"	Stalgard	2,000	33
EHL280	12-14 x 2"	#3 Drilit	9/16"	Stalgard	1,500	30
EHL295	12-14 x 3"	#3 Drilit	9/16"	Stalgard	1,000	27
EHL310	12-14 x 4"	#3 Drilit	9/16"	Stalgard	500	15
ECW725	12-24 x 1-1/4"	#5 Drilltite	9/16"	Stalgard	2,500	35
ECW745	12-24 x 1-1/2"	#5 Drilltite	9/16"	Stalgard	2,000	28
ECW755	12-24 x 2"	#5 Drilltite	9/16"	Stalgard	1,000	20
1/4" Diameter, 3/8" Hex Washer Head						
EHL515	1/4-14 x 3/4"	#3 Drilit	5/8"	Stalgard	2,500	40
EHK315	1/4-14 x 7/8"	#1 Drilit	9/16"	Stalgard	2,500	32
EHL530	1/4-14 x 1"	#3 Drilit	5/8"	Stalgard	2,000	37
EHL556	1/4-14 x 1-1/4"	#3 Drilit	5/8"	Stalgard	1,500	31
EHL577	1/4-14 x 1-1/2"	#3 Drilit	5/8"	Stalgard	1,500	34
EHL585	1/4-14 x 2"	#3 Drilit	5/8"	Stalgard	1,000	27
EHL600	1/4-14 x 3"	#3 Drilit	5/8"	Stalgard	800	29
EHL610	1/4-14 x 4"	#3 Drilit	5/8"	Stalgard	500	24

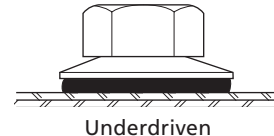
To assure a weather-tight seal, fasteners must be properly installed.



Correct



Overdriven



Underdriven



Drilit® Drill Screws for Wood-to-Metal Applications

For efficient fastening of wood or composite materials to steel



These self-drilling fasteners eliminate separate drilling and tapping operations for faster installation in wood-to-metal applications.

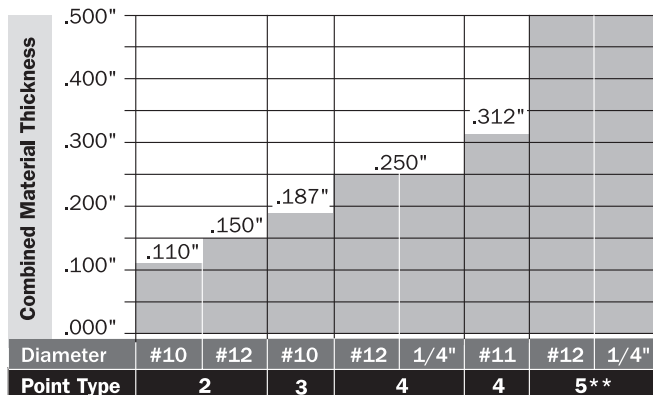
Specifications

- Diameters: #10 to 1/4"
- Lengths: 3/4" to 4"
- Head Styles: Flat and wafer
- Drive System: Phillips
- Point Styles: Types 3 and 4
- Material: Carbon steel
- Finishes: Gray Stalgard® coating

Features & Benefits

- Eliminates pre-drilling of wood
- Broad selection of sizes
- Can be used with steel up to 1/4" thick
- Gray Stalgard coating provides 1000 hours of salt spray resistance; developed for use with ACQ-treated lumber with retention levels no higher than .25 PCF

Cat. No.	Description	Point Type	Finish	Typical Wood Thickness	Drilling Capacity (min. – max. in steel)	Qty. Per Shipper	Wt. Per Shipper
#10 Diameter, #2 Phillips Wafer Head							
EDM582	10-24 x 3/4"	#3	Gray Stalgard	3/8"	.036" – .187"	8,000	43
EDM592	10-24 x 1"	#3	Gray Stalgard	1/2"	.036" – .187"	6,000	43
EDM607	10-24 x 1-1/4"	#3	Gray Stalgard	5/8"	.036" – .187"	5,000	38
EDT602	10-24 x 1-7/16"	#3 w/wings	Gray Stalgard	3/4"	.036" – .187"	4,000	40
EDM622	10-16 x 1-1/2"	#3	Gray Stalgard	3/4"	.036" – .187"	3,500	35
EDM635	10-16 x 1-13/16"	#3	Gray Stalgard	3/4"	.036" – .150"	2,500	29
#12 Diameter, #3 Phillips Wafer Head							
EDT720	12-24 x 1-3/4"	#4 w/wings	Gray Stalgard	1"	.060" – .250"	2,000	29
#12 Diameter, #3 Phillips Flat Head							
EDT267	12-24 x 2-1/4"	#4 w/wings	Gray Stalgard	1-1/4"	.060" – .250"	2,000	32
EDT282	12-24 x 2-3/4"	#4 w/wings	Gray Stalgard	1-5/8"	.060" – .250"	1,500	30
EDJ867	12-14 x 3-5/8"	#2 w/pilot	Gray Stalgard	1-3/4"	.030" – .150"	1,000	24
1/4" Diameter, #3 Phillips Flat Head							
EDT442	1/4-20 x 3"	#4 w/wings	Gray Stalgard	2"	.060" – .250"	1,000	30
EDT470	1/4-20 x 4"	#4 w/wings	Gray Stalgard	3"	.060" – .250"	1,000	30



Drilling and Tapping Capacity for Wood to Metal Screws (Maximum Material Thickness)*

* **NOTE:** Some drill and tap capacities may vary due to special features on some fasteners. Refer to product performance specifications for any individual fastener to confirm performance and capabilities.

** Bi-Flex fasteners only. See page 17 & 18 for details.

NOTE: Due to a wide variety of application conditions or intervening factors not under our control, we assume no liability for the use of the information provided in this document. For additional product information and technical assistance, **please contact Elco directly at 1-800-435-7213.**



Drill Screws with Extended Drilling Capacity

Specially-designed drill points handle the toughest applications



This line of heavy-duty drill screws is designed to speed installation in steel applications up to 1/2" thick.

Specifications

- Diameters: #12 and 1/4"
- Lengths: 7/8" to 8"
- Head Style: Hex washer
- Drive System: Hex
- Material: Carbon steel
- Finish: Silver Stalgard® coating

Features & Benefits

- Points are either Drilit® forged or Drilltite® precision milled points
- Can drill metal up to 0.500" thick
- Stalgard coating provides 1000 hours of salt spray resistance (per ASTM B117)

Catalog No.	Description	Point Type	Finish	Carton Quantity	Carton Weight
#12 Diameter Decking Fasteners and Drill Screws for Steel Thicknesses of .175" to .500"					
EDC801	12-24 x 7/8"	#4 Drilit	Stalgard	4,500	47
EDC816	12-24 x 1-1/4"	#4.5 Drilit	Stalgard	3,500	50
ECC720	12-24 x 1-1/4"	#5 Drilltite	Stalgard	4,000	45
ECC740	12-24 x 1-1/2"	#5 Drilltite	Stalgard	2,500	40
ECC750	12-24 x 2"	#5 Drilltite	Stalgard	2,000	35
1/4" Diameter Decking Fasteners and Drill Screws for Steel Thicknesses of .175" to .500"					
*ECC940	1/4-20 x 3"	#5 Drilit	Stalgard	1,000	36
*ECC950	1/4-20 x 4"	#5 Drilit	Stalgard	500	46
*ECC960	1/4-20 x 5"	#5 Drilit	Stalgard	500	31
*ECC970	1/4-20 x 6"	#5 Drilit	Stalgard	500	37
*ECC980	1/4-20 x 8"	#5 Drilit	Stalgard	150	16

* denotes globally-sourced product.

NOTE: 1/4-20 drill screws with #5 points are available with bonded washers.



TapFast® Fasteners

For use in metal-to-wood applications



High-performance fastener designed specifically for attaching light-gauge metal panels (18 ga. max.) to wood frame structures.

Specifications

- Size: #10
- Lengths: 1" to 3"
- Head/Drive: 1/4" HWH
- Thread: Hi-lo
- Point: Type 17
- Material: Carbon steel
- Finish: Stalgard® coating

Features & Benefits

- Aluminum bonded sealing washer
- High-low thread increases performance
- Easily penetrates multiple panel thicknesses
- Stalgard coating provides 1000 hours of salt spray resistance (per ASTM B117)

Catalog No.	Description	Point	Finish	Carton Quantity	Carton Weight
#9 Diameter, with Bonded Sealing Washer, Hex Washer Head					
EHH210	10-16 x 1"	Type 17	Stalgard	3,000	26
EHH230	10-16 x 1-1/2"	Type 17	Stalgard	2,500	29
EHH250	10-16 x 2"	Type 17	Stalgard	1,500	20
EHH265	10-16 x 2-1/2"	Type 17	Stalgard	1,000	17
EHH280	10-16 x 3"	Type 17	Stalgard	800	16

Performance Data

Wood Type: SPF (Spruce, Pine or Fir) .38-.39 Specific Gravity

Pull-Out (Lbs.)

Force Orientation relative to wood's grain	Edge Distance	Embedment (in.)		
		1"	1-1/2"	2"
With the grain (Into thin side)	3/4"	385	553	887
Against the grain (Into wide side)	1 1/2"	366	591	890

Shear (Lbs.)

Force Orientation relative to wood's grain	Edge Distance	Embedment (in.)		
		1"	1-1/2"	2"
With the grain (Into thin side)	3/4"	447	484	647
Against the grain (Into wide side)	1 1/2"	322	655	654

Wood Type: #2 SYP (Southern Yellow Pine) .57-.60 Specific Gravity

Pull-Out (Lbs.)

Force Orientation relative to wood's grain	Edge Distance	Embedment (Inches)		
		1"	1-1/2"	2"
With the grain (Into thin side)	3/4"	1,118	1,647	1,947
Against the grain (Into wide side, near edge)	3/4"	1,220	1,572	1,806

Shear (Lbs.)

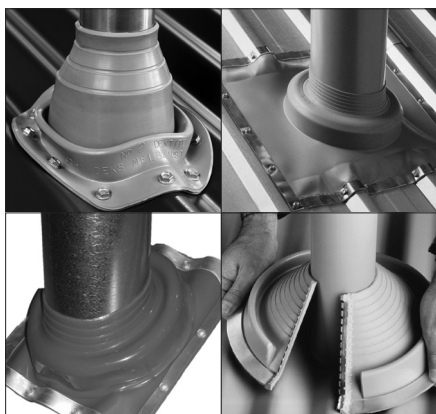
Force Orientation relative to wood's grain	Edge Distance	Embedment (Inches)		
		1"	1-1/2"	2"
With the grain (Into thin side)	3/4"	782	887	939
Against the grain (Into wide side, near edge)	3/4"	663	686	724

infastech/Elco Test Report Number 1002192



DEKS Flashing

Watertight flashing for metal roofs



For over 40 years, DEKS has been providing all-in-one, watertight flashing for metal roofs. Each come with DEK's 20-year guarantee.

Specifications

- 4 unique designs
 - Gray Dektite Original: provides 10mm (1/2") continuous contact
 - Gray Dektite Soaker: engineered for use in "soaker territory"
 - Gray Retrofit Original: built-in crimp snaps around existing piping
 - Red Dektite Silicone: Can withstand a wide range of temperatures

Features & Benefits

- Quality polymers and engineering provide proven performance - used globally for over 40 years
- Brand name and clear size markings ease identification and sizing

Gray Dektite Original

Catalog No.	Description	Color	Pipe O.D. Range	Base O.D.	Roof Pitch	Carton Quantity
EPF100	Mini	Gray	0 – 1-3/8"	3-3/4"	0 – 40° (10 on 12)	40
EPF110	#1	Gray	1/8" – 2-1/2"	4-3/4"	0 – 40° (10 on 12)	10
EPF120	#2	Gray	1-3/4" – 3-1/4"	6-1/2"	0 – 40° (10 on 12)	10
EPF130	#3	Gray	1/4" – 5"	8"	0 – 40° (10 on 12)	10
EPF140	#4	Gray	3" – 6-1/4"	9-1/2"	0 – 40° (10 on 12)	10
EPF150	#5	Gray	4-1/4" – 7-1/2"	11"	0 – 40° (10 on 12)	5
EPF160	#6	Gray	5" – 9"	12-3/4"	0 – 40° (10 on 12)	5
EPF170	#7	Gray	6" – 11"	14-3/4"	0 – 40° (10 on 12)	5
EPF180	#8	Gray	7" – 13"	16-3/4"	0 – 40° (10 on 12)	5
EPF190	#8	Gray	10" – 19"	25-1/2"	0 – 40° (10 on 12)	2

Gray Dektite Original

Catalog No.	Description	Color	Pipe O.D. Range	Base O.D.	Roof Pitch	Carton Quantity
EPF195	Soaker	Gray	15"-24"	55-3/4" x 35-1/2"	0 – 60° (18 on 20)	1

Gray Retrofit Original – Round Base

Catalog No.	Description	Color	Pipe O.D. Range	Base O.D.	Roof Pitch	Carton Quantity
EPF801	#801	Gray	3/4" – 2-3/4"	6-1/4"	0 – 40° (10 on 12)	10
EPF802	#802	Gray	2" – 7-11/4" ?	10-3/4"	0 – 40° (10 on 12)	5
EPF802	#802	Gray	3/4" – 2-3/4"	14-1/2"	0 – 40° (10 on 12)	5

Red Dektite Silicone – Round Base

Catalog No.	Description	Color	Pipe O.D. Range	Base O.D.	Roof Pitch	Carton Quantity
EPF330	#3	Red	1/4" – 5"	8"	0 – 40° (10 on 12)	10
EPF350	#5	Red	4-1/4" – 7-1/2"	11"	0 – 40° (10 on 12)	5
EPF380	#8	Red	7" – 13"	16-3/4"	0 – 40° (10 on 12)	5
EPF390	#9	Red	10" – 19"	25-1/2"	0 – 40° (10 on 12)	2



Architectural Roof Clip Fasteners

Low-profile head design for wood and steel applications



The efficiency of self-drilling fasteners and the aesthetics of an unobtrusive head are ideal for attaching metal roof clips to metal and wood.

Specifications

- Diameters: #10 to #12"
- Lengths: 1" to 2"
- Head Styles: Pancake
- Drive Systems: Phillips
- Material: Carbon steel
- Finishes: Silver or gray Stalgard® coating

Features & Benefits

- Eliminates separate drilling and tapping operations
- Pancake head improves aesthetics and prevents panel dimpling
- Stalgard coating provides 1000 hours of salt spray resistance (per ASTM B117)
- Gray Stalgard is ACQ-compatible

Catalog No.	Description	Drive System	Point Type	Finish*	Carton Quantity	Carton Weight
For Steel						
EDO450	10-16 x 1"	#2 Phillips	#3	Silver Stalgard	4,000	34
EDO460	10-16 x 1-1/2"	#2 Phillips	#3	Silver Stalgard	3,000	34
EDO470	10-16 x 2"	#2 Phillips	#3	Silver Stalgard	2,000	28
EDO735	12-14 x 1"	#2 Phillips	#3	Silver Stalgard	4,000	40
For Wood/Light Gauge Steel						
ETA850	10-12 x 1"	#2 Phillips	Pierce	Gray Stalgard	4,000	37
ETA855	10-12 x 1-1/2"	#2 Phillips	Pierce	Gray Stalgard	3,000	33
ETA860	10-12 x 2"	#2 Phillips	Pierce	Gray Stalgard	2,000	27
ETA870	12-11 x 1"	#2 Phillips	Pierce	Gray Stalgard	4,000	40

* Gray Stalgard coating is ACQ-compatible

Performance Data

Pull-Out Values (Lbs)

Diameter	Point Type	26 ga.	24 ga.	22 ga.	20 ga.	18 ga.	14 ga.	12 ga.
#10	#3	139	206	272	303	498	970	1495
#12	#3	142	214	296	349	580	1078	1553

Diameter	Point Type	1/2" Plywood	5/8" Plywood	3/4" Plywood	Yellow Pine	3/4" OSB
#10	Pierce	366	381	401	582	290
#12	Pierce	378	393	429	677	329

Shear values (Lbs)

Diameter	Point Type	20 ga.	18 ga.	16 ga.	14 ga.
#10	#3	301	503	710	969
#12	#3	775	1361	1624	1974

NOTE: All performance data shown is based on tests performed under laboratory conditions at independent construction testing facilities. The appropriate safety factor should be applied and code requirements factored into specification and use of these fasteners. A safety factor of 4:1 or 25% of the ultimate average values shown is generally accepted as an appropriate working load. Final determination of the appropriate safety factor and use of these fasteners is the sole responsibility of the user, specifying Engineer, Architect or other responsible person designing the connection. Due to a wide variety of application conditions or intervening factors not under our control, we assume no liability for the use of the information provided in this document. For additional product information and technical assistance, **please contact Elco directly at 1-800-435-7213.**



Dril-Flex® Structural Drill Screws

Virtually immune to delayed embrittlement failures



Dual heat treated drill screws provide the strength, ductility and resistance to embrittlement required for critical applications.

Specifications

- Diameters: #10 to 3/8"
- Lengths: 3/4" to 4"
- Head/Drive Styles: Hex washer and phillips pan, wafer and undercut flat
- Point Types: #3, #4 and #5
- Material: Alloy steel
- Heat Treat: Grade 5
- Finish: Silver Stalgard® or Stalgard SUB coating

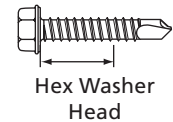
Features & Benefits

- Stalgard SUB coating (Hex washer product only) provides 2000 hours of salt spray resistance (per ASTM B117)
- High-hardness points and lead threads for drilling and tapping with lower-hardness in load-bearing threads for ductility
- Virtually immune to delayed embrittlement failures

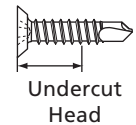
Catalog No.	Description	Pt.	Load-Bearing Area	Finish	Carton Quantity	Carton Weight
#10 Diameter, 5/16" Hex Washer Head						
EAF430	10-16 x 3/4"	#3	.380"	Stalgard SUB	6,000	48
EAF460	10-16 x 1-1/2"	#3	1.25"	Stalgard SUB	2,500	30
EAF470	10-16 x 2"	#3	1.50"	Stalgard SUB	2,000	28
EAF480	10-16 x 2-1/2"	#3	2.25"	Stalgard SUB	1,500	25
#10 Diameter, #2 Phillips Pan Head						
EDX445	10-16 x 3/4"	#2	.380"	Stalgard	6,000	36
#10 Diameter, #2 Phillips Wafer Head						
EBL530	10-24 x 1-1/4"	#3	.750"	Stalgard	5,000	44
#12 Diameter, 5/16" Hex Washer Head						
EAF621*	12-14 x 7/8"	#3	.380"	Stalgard SUB	5,000	54
EAF641	12-14 x 1"	#3	.500"	Stalgard SUB	4,000	44
EAF681	12-14 x 1-1/2"	#3	1.00"	Stalgard SUB	2,500	38
EAF690	12-14 x 2"	#3	1.50"	Stalgard SUB	2,000	37
EAF715	12-14 x 3"	#2	2.35"	Stalgard SUB	1,000	27
#12 Diameter, #3 Phillips Undercut Flat Head						
EBL215	12-14 x 1"	#3	.500"	Stalgard	4,000	36
EBL223	12-14 x 1-1/2"	#3	1.00"	Stalgard	2,500	26
1/4" Diameter, 3/8" Hex Washer Head						
EAF816	1/4-14 x 1"	#3	.450"	Stalgard SUB	3,000	54
EAF841	1/4-14 x 1-1/2"	#3	.950"	Stalgard SUB	2,000	45
EAF876	1/4-20 x 1-1/2"	#4	.830"	Stalgard SUB	2,000	48
EAF846	1/4-14 x 2"	#3	1.45"	Stalgard SUB	1,500	41
EAF886	1/4-20 x 2"	#4	1.33"	Stalgard SUB	1,500	45
EAF865	1/4-20 x 1-1/8"	#4	.500"	Stalgard SUB	2,500	51
EAF888	1/4-20 x 1-3/4"	#5	.800"	Stalgard SUB	1,000	27
EAF890	1/4-20 x 2-1/2"	#4	1.83"	Stalgard SUB	1,000	45
EAF900	1/4-20 x 3-3/8"	#4	2.70"	Stalgard SUB	500	22
EAF910	1/4-20 x 4"	#4	3.50"	Stalgard SUB	500	23
1/4" Diameter, #3 Phillips Undercut Flat Head						
EBL330	1/4-20 x 3"	#4	2.50"	Stalgard	500	20
EBL340	1/4-20 x 4"	#4	3.50"	Stalgard	500	23
5/16" Diameter, 3/8" Hex Washer Head						
EAF940	5/16-18 x 1-1/2"	#3	.800"	Stalgard SUB	1,000	37
EAF960	5/16-24 x 1-1/2"	#4	.800"	Stalgard SUB	1,000	40
EAF970	5/16-24 x 2"	#4	1.25"	Stalgard SUB	1,000	49
3/8" Diameter, 3/8" Hex Washer Head						
EAF310	3/8-16 x 1-3/4"	#1	.850"	Stalgard SUB	500	18

* for aluminum applications only.

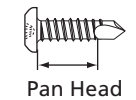
Load-Bearing Area:



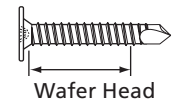
Hex Washer Head



Undercut Head



Pan Head



Wafer Head

Dril-Flex® Structural Drill Screws Technical Information

Pull-out Tests – Steel: Pull-out values shown are in lbs.

Screw Size	Point Type	Drill Cap.	Steel							
			18	16	14	12	1/8	3/16	1/4	5/16
10-16	3	.150	396	501	634	1595	1693			
12-14	3	.187	396	527	710	1678	2061	2898		
1/4-14	3	.187	398	530	686	1950	2264	3919		
1/4-20	4	.312		516	649	1912	2296	2928	3561	4488
5/16-18	3	.210				2333	2856			
5/16-24	4	.312				2148	2573	4226	5424	6622
3/8-16	1	.075			1843					

Shear Tests – Steel: Shear values shown are in lbs.

Screw Size	Point Type	Drill Cap.	Steel						
			18-18 ga.	18-14 ga.	16-16 ga.	14-14 ga.	1/8"-3/16"	3/16"-1/4"	1/4"-12 ga.
10-16	3	.150	1362	1733	1462				
12-14	3	.187	1315	2118	1655	1816			
1/4-14	3	.210	1395	2313	1681	2417	2600		
1/4-20	4	.312	1350	2086	1582	2450	2814	2810	2706
5/16-18	3	.210	1509	2300	1811	3255			
5/16-24	4	.312					5486	5283	4761
3/8-16	1	.075				6750			

NOTE: All test setups and dimensions were as limited and outlined in AISI Test Method for Mechanically Fastened Cold-Formed Steel Connections (CF92-1) document. Performance values listed are ultimate values obtained under laboratory conditions.

Comparison to Stainless Steel Screws

300 series stainless steel fasteners provide high resistance to hydrogen embrittlement failures. However, stainless steel is galvanically incompatible with aluminum or steel panels. In this case, stainless steel fasteners trigger a sacrificial action, which can lead to degradation of the panel and loosening of the fastener.

A dual-hardening process allows Dril-Flex® fasteners to provide high strength and resistance to hydrogen embrittlement failures. Their Stalgard® finish provides corrosion resistance several times greater than other commonly-used finishes. If an environment is corrosive enough to significantly affect the Stalgard finish, the potential for significant degradation of the aluminum/stainless steel assembly would also exist.

Galvanic Series

Anodic End	
<i>Metal/Alloy</i>	<i>EMF(v)</i>
Magnesium.....	-1.60
Zinc.....	-1.10
Alum (5000, 6000, 7000).....	-.75
Iron, Low Alloy Steels.....	-.70
Alum (2000).....	-.60
Lead.....	-.55
18% Chromium Steel.....	-.35
Naval Brass.....	-.30
Brass, Bronze.....	-.25
Austenitic Stainless (300 Series)	-.20
Nickel.....	-.15
Silver.....	0
Gold.....	+15
Cathodic End	

Approvals

- ICC-ES Report No. ESR-3332
- COLA (City of Los Angeles) Research Report #25095

Identification

(hex washer head shown)



NOTE: All performance data shown is based on tests performed under laboratory conditions at independent construction testing facilities. The appropriate safety factor should be applied and code requirements factored into specification and use of these fasteners. A safety factor of 4:1 or 25% of the ultimate average values shown is generally accepted as an appropriate working load. Final determination of the appropriate safety factor and use of these fasteners is the sole responsibility of the user, specifying Engineer, Architect or other responsible person designing the connection. Due to a wide variety of application conditions or intervening factors not under our control, we assume no liability for the use of the information provided in this document.

For additional product information and technical assistance, please contact Elco directly at 1-800-435-7213.

Pull-out Tests – Aluminum

Screw Size	Point Type	Drill Cap.	Aluminum 6063-T5		
			1/8"	1/4"	3/8"
10-16	3	.150			
12-14	3	.187	939	2286	
1/4-14	3	.210	1003	2424	
1/4-20	4	.312	897	2075	3683
5/16-18	3	.210	1120	2967	4796
5/16-24	4	.312	1043	2566	

Shear Tests – Aluminum

Screw Size	Point Type	Drill Cap.	Aluminum 6063-T5	
			1/8" - 1/8"	1/8" - 1/4"
10-16	3	.150	1466	
12-14	3	.187	1797	2483
1/4-14	3	.210	1996	2883
1/4-20	4	.312	2006	2926
5/16-18	3	.210	2132	3009
5/16-24	4	.312	1849	2926

Embrittlement Tests

Embrittlement testing of Dril-Flex screws was performed in accordance to ASTM F1624-06. Fastener lots were tested to determine their Threshold Stress Limits for both Internal Hydrogen Embrittlement and Environmental Hydrogen Embrittlement. Threshold Stress Limit is the stress level below which no time-dependent cracking will occur. Above this level, subcritical cracking that leads to time-delayed fracture or embrittlement may occur if the fastener is exposed to a hydrogen environment.

Embrittlement Test Results

- Dril-Flex fasteners have a hardness range of HRC 28 – 34, which is roughly equivalent to a SAE Grade 5 fastener (HRC 25 – 34).
- Dril-Flex fasteners showed resistance to the effect of hydrogen-assisted cracking when loaded to 75% of their tensile strength. This is within accepted industry guidelines for in-service loading conditions.
- Dril-Flex fasteners showed no degradation or failures in tensile strength below their ultimate tensile strength.



Tap-Flex™ Thread-Forming Structural Screws

Increased thread engagement with strength and ductility



Feature a unique thread profile to ease installation and increase performance.

Specifications

- Diameters: 3/8", 1/2", and 5/8"
- Head Style: Hex washer
- Threads: E-Form® five-lobe thread forming
- Material: Alloy steel
- Finish: Silver Stalgard® SUB coating
- Heat Treat: Grade 5; meets ASTM A449 specifications (120 KSI strength)

Features and Benefits

- E-Form thread overcomes friction build-up and reduces drive torque
- Roll forms own work-hardened thread to resist loosening and provide enhanced pull-out values
- Virtually immune to delayed embrittlement failures
- Stalgard SUB coating provides 2000 hours of salt spray resistance (per ASTM B117)

Size	Catalog No.	Finish	Drive Size	Drill Bit Size	Load-Bearing Length	Quantity	Weight
3/8" Diameter, Hex Washer Head							
3/8-16 x 1-1/2	ESU310	Stalgard SUB	9/16	11/32	1.00"	500	34
3/8-16 x 2	ESU320	Stalgard SUB	9/16	11/32	1.49"	500	40
3/8-16 x 2-1/2	ESU330	Stalgard SUB	9/16	11/32	1.99"	500	46
1/2" Diameter, Hex Washer Head							
1/2-13 x 1-1/2	ESU410	Stalgard SUB	3/4	15/32	0.875"	250	36
1/2-13 x 2	ESU420	Stalgard SUB	3/4	15/32	1.365"	250	41
1/2-13 x 2-1/2	ESU430	Stalgard SUB	3/4	15/32	1.865"	250	47
5/8" Diameter, Hex Washer Head							
5/8-11 x 1-1/2	ESU510	Stalgard SUB	3/4	19/32	0.800"	250	46
5/8-11 x 2	ESU520	Stalgard SUB	3/4	19/32	1.24"	150	33
5/8-11 x 2-1/2	ESU530	Stalgard SUB	3/4	19/32	1.74"	150	38

Performance Data

Seating Torque (in lbs)

Fastener Size	6063 T5 Aluminum			6061 T6 Aluminum			6063 T5 on 1018 Steel				6061 T6 on 1018 Steel			
	1/8	3/16	1/4	1/8	3/16	1/4	1/8	3/16	1/4	3/8	1/8	3/16	1/4	3/8
3/8-16	171	214	285	231	328	490	412	638	805	858	389	581	740	771
1/2-13	255	368	471	338	547	767	558	955	1375	1895	513	807	1189	1658
5/8-11	261	486	662	343	694	943	654	1258	1662	2976	600	1061	1492	2083

Note: These numbers were calculated from the maximum reading (failure torque) during drive-to-fail testing (Seating Torque = Failure Torque x .75).

Shear (Ultimate lbs)

Fastener Size	6063 T5 Aluminum			6061 T6 Aluminum			6063 T5 to 1018 Steel				6061 T6 to 1018 Steel			
	1/8 to 1/8	3/16 to 3/16	1/4 to 1/4	1/8 to 1/8	3/16 to 3/16	1/4 to 1/4	1/8 to 1/8	3/16 to 3/16	1/4 to 1/4	1/4 to 3/8	1/8 to 1/8	3/16 to 3/16	1/4 to 1/4	1/4 to 3/8
3/8-16	2321	3476	4979	3560	5205	6885	5015	6560	6975	6965	5711	8701	7721	7611
1/2-13	2784	3669	5230	4482	6167	8718	4773	6455	8396	8689	6052	9769	13976	13340
5/8-11	2696	3775	5455	4216	6768	9292	4558	6196	8290	8060	5967	9577	13124	15309

Pull Out (Ultimate lbs)

Fastener Size	6063 T5 Aluminum			6061 T6 Aluminum			1018 Steel			
	1/8	3/16	1/4	1/8	3/16	1/4	1/8	3/16	1/4	3/8
3/8-16	1311	2365	3281	2080	3805	5981	3501	5986	11440	11862
1/2-13	1431	2230	3694	2190	3869	7527	3668	7411	13613	20440
5/8-11	1755	2907	4191	2641	5202	8210	4500	8300	16678	26680

Identification



E-Form® Profile



Bi-Flex™ 300 Series Stainless Steel Bi-Metal Self-Drilling Screws

Bi-metal technology provides outstanding corrosion resistance and long service life



Bi-Flex™ fasteners provide the corrosion resistance of 300 series stainless steel and the efficiency of drillscrews.

Specifications

- Diameters: #10 to 1/4"
- Lengths: 3/4" to 8"
- Drive Systems: Hex and phillips
- Material: Hardened steel tapping threads and point fused onto an 18-8 stainless steel shank and head
- Finish: Stalgard® GB (Galvanic Barrier) coating

Features & Benefits

- High strength, ductility and reliability
- Virtually immune to delayed embrittlement failures
- Greater galvanic compatibility in dissimilar metal applications involving aluminum
- High in-place value over the life of application

	Catalog No.	Dia. – TPI	L Length	Drive System	Point Size	B Maximum Load-bearing Length*	Pieces per 1/4 Keg	Weight per 1/4 Keg
Hex Washer Head								
	EAJ100	8-18	3/4"	5/16" hex	2	0.32"	5,000	23
	EAJ102	8-18	1"	5/16" hex	2	0.50"	5,000	27
	EAJ110	10-16	3/4"	5/16" hex	2	0.32"	5,000	32
	EAJ120	10-16	1"	5/16" hex	2	0.50"	5,000	46
	EAJ140	10-16	1-1/2"	5/16" hex	2	1.10"	2,500	39
	EAJ185	12-14	1"	5/16" hex	2	0.50"	3,000	31
	EAJ215	12-14	1-1/2"	5/16" hex	2	1.00"	2,500	34
	EAJ190	12-14	1"	5/16" hex	3	0.50"	4,000	41
	EAJ220	12-14	1-1/2"	5/16" hex	3	1.00"	2,500	34
	EAJ260	12-14	2-1/2"	5/16" hex	3	2.00"	1,000	21
	EAJ240	12-14	2"	5/16" hex	2	1.50"	1,500	26
	EAJ320	12-24	1-1/2"	5/16" hex	5	0.60"	2,500	40
	EAJ340	12-24	2"	5/16" hex	5	1.10"	2,000	35
	EAJ415	1/4-14	1"	3/8" hex	2	0.50"	2,500	40
	EAJ430	1/4-14	1-1/2"	3/8" hex	2	1.00"	1,000	30
	EAJ445	1/4-14	2"	3/8" hex	2	1.50"	1,500	25
	EAJ540	1/4-20	1"	3/8" hex	3	0.50"	2,500	40
	EAJ580	1/4-20	1-1/2"	3/8" hex	3	1.00"	1,000	32
	EAJ600	1/4-20	1-1/2"	3/8" hex	5	0.60"	1,000	32
	EAJ610	1/4-20	2"	3/8" hex	3	1.50"	1,500	38
	EAJ615	1/4-20	2"	3/8" hex	5	1.10"	1,500	38
	EAJ640	1/4-20	2-1/2"	3/8" hex	3	2.00"	1,000	32
	EAJ650	1/4-20	3"	3/8" hex	3	2.50"	500	18
	EAJ630	1/4-20	3"	3/8" hex	5	2.10"	500	18
	EAJ660	1/4-20	4"	3/8" hex	3	3.50"	500	22
	EAJ670	1/4-20	4"	3/8" hex	5	3.10"	500	23
	EAJ675	1/4-20	5"	3/8" hex	5	4.10"	250	16
	EAJ680	1/4-20	6"	3/8" hex	5	5.10"	250	18
	EAJ690C	1/4-20	8"	3/8" hex	5	7.10"	150	15

* The load-bearing length is the length of 300 series stainless under the hex, pan or pancake head or including the flat head. Hardened steel length (lead threads and point) should be through the connection and not in the load bearing section of the connection.



Bi-Flex™ 300 Series Stainless Steel Bi-Metal Self-Drilling Screws

Ordering and Technical Information

	Catalog No.	Dia. – TPI	L Length	Drive System	Point Size	B Maximum Load-bearing Length*	Pieces per 1/4 Keg	Weight per 1/4 Keg
--	-------------	------------	----------	--------------	------------	--------------------------------	--------------------	--------------------

Flat Head Reamers w/wings

	EBN140	10-16	1-1/2"	#2 phillips	3	0.800"	3,500	30
	EBN345	12-24	2-13/16"	#3 phillips	5	1.710"	1,000	21
	EBN645	1/4-20	2-13/16"	#3 phillips	5	1.710"	1,000	28

Flat Head Undercut

	EBN200	12-14	1"	#3 phillips	2	0.500"	4,000	31
	EBN240	12-14	1-1/2"	#3 phillips	2	1.00"	2,500	29
	EBN630	1/4-20	3"	#3 phillips	2	2.500"	500	18
	EBN640	1/4-20	4"	#3 phillips	2	3.500"	500	22

Pan Head

	EAX100	8-18	3/4"	#2 phillips	2	0.320"	5,000	22
	EAX102	8-18	1"	#2 phillips	2	0.500"	5,000	27
	EAX110	10-16	3/4"	#2 phillips	2	0.320"	5,000	30
	EAX120	10-16	1"	#2 phillips	2	0.500"	5,000	37

Pancake Head

	EBN300	10-16	1"	#2 phillips	2	0.500"	4,000	29
	EBN320	12-14	1"	#2 phillips	3	0.500"	4,000	40

* The load-bearing length is the length of 300 series stainless under the hex, pan or pancake head or including the flat head. Hardened steel length (lead threads and point) should be through the connection and not in the load bearing section of the connection.



flat, pan and pancake head



hex washer head

Identification

The head marking consists of the number "3" above the Elco® logo as shown to the left.



Bi-Flex™ 300 Series Stainless Steel Bi-Metal Self-Drilling Screws

Technical Information

Performance Data

Pull-Out Values

Screw Size	Pt.	Drill Capacity (in.)	Pull-Out (Lbs)								
			Steel RB60-75 50 – 66KSI							Aluminum 6063-T5 22KSI	
			18 ga.	16 ga.	14 ga.	12 ga.	1/8"	3/16"	1/4"	1/8"	1/4"
8-18	#2	0.100	499	558	875	1425					
10-16	#2	0.110	595	633	943	1433	–	–	–	994	–
10-16	#3	0.187	–	616	684	1242	1605	1527	–	961	–
12-14	#2	0.110	528	750	892	1536	–	–	–	1132	–
12-14	#3	0.230	417	679	802	1371	2028	2499	–	974	–
12-24	#5	0.500	–	–	–	–	–	2110	2781	538	1995
1/4-14	#2	0.110	619	885	1082	1830	2943	–	–	1310	–
1/4-20	#3	0.230	–	680	780	1442	2623	3684	4069	1037	–
1/4-20	#5	0.500	–	–	–	–	–	–	2622	–	1724

Ultimate Strengths**

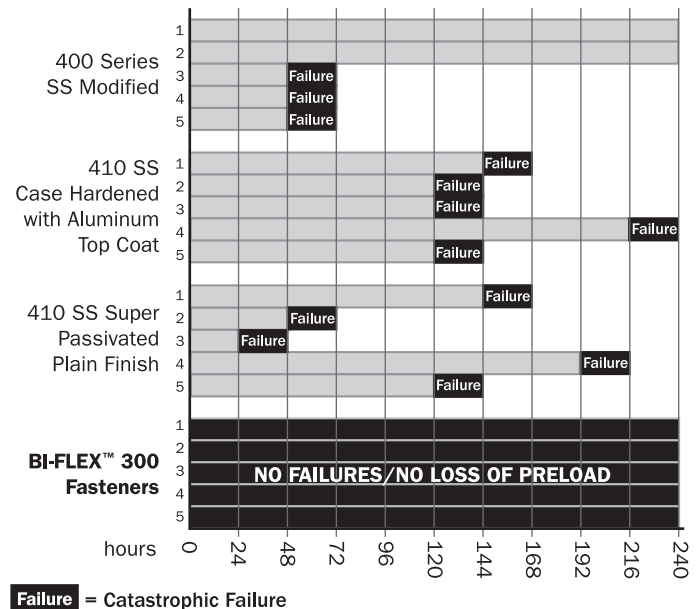
Size	Tensile (Lbs)	Shear Average Lbs Ultimate
10-16	1847	1282
12-14	2628	1950
12-24	2734	2284
1/4-14	3459	2676
1/4-20	4124	2860

** Values are for 300 series stainless fastener threaded shank

Susceptibility To Embrittlement Failures

In head to head testing, Bi-Flex™ 300 fasteners and three different types of 400 series martensitic stainless, self-drilling screws were installed in identical test coupons of unplated steel and aluminum. They were then subjected to a mildly corrosive environment of 5% neutral salt spray testing per ASTM B117. At the start of the test all samples were torqued (pre-loaded) to 75 in lbs. Every 24 hours the samples were inspected for torque value and retorqued to 75 in lbs.

The parts were evaluated by scanning electron microscope (S.E.M.) to determine the type of fracture that had occurred. The three 400 series fasteners showed an intergranular type failure, indicative of fracturing that occurs from hydrogen assisted stress corrosion cracking. **No failures or loss of preload occurred with the Bi-Flex fasteners.**



All fasteners were placed through a clear hole in 6061 T6 aluminum with a thickness of 0.125" and drilled into an unplated steel strip measuring a thickness of 0.125". A strip of 0.060" aluminum was placed in between the 0.125" aluminum and steel strip on one side, to simulate a fastener placed under load.

NOTE: All performance data shown is based on tests performed under laboratory conditions at independent construction testing facilities. The appropriate safety factor should be applied and code requirements factored into specification and use of these fasteners. A safety factor of 4:1 or 25% of the ultimate average values shown is generally accepted as an appropriate working load. Final determination of the appropriate safety factor and use of these fasteners is the sole responsibility of the user, specifying Engineer, Architect or other responsible person designing the connection. Due to a wide variety of application conditions or intervening factors not under our control, we assume no liability for the use of the information provided in this document.

For additional product information and technical assistance, please contact Elco directly at 1-800-435-7213.



Alumi-Flex™ 302 (18-8) Stainless Steel Drill Screws

For fastening to aluminum when corrosion and galvanic reaction are a primary concern



Stainless steel drill screws provide strength and corrosion resistance in a variety of aluminum applications.

Specifications

- Diameters: #10 to 1/4"
- Lengths: 1/2" to 1-1/2"
- Head Style: Hex washer
- Drive System: Hex
- Point Types: #3 and #4
- Material: 302 stainless steel
- Finish: Stalgard® GB (Galvanic Barrier) coating

Features & Benefits

- Provides a very high level of corrosion resistance
- Coating allows greater galvanic compatibility in dissimilar metal applications involving aluminum
- Head marked with a "3" for easy identification

Catalog No.	Description	Finish	Carton Quantity	Carton Weight
#10 Diameter Hex Washer Head				
EAH430	10-16 x 1/2"	Stalgard GB	8,000	51
EAH445	10-16 x 3/4"	Stalgard GB	6,000	46
EAH460	10-16 x 1"	Stalgard GB	5,000	45
#10 Diameter, Undercut Flat Head				
EBM160	10-16 x 3/4"	Stalgard GB	10,000	44
#12 Diameter Hex Washer Head				
EAH630	12-14 x 3/4"	Stalgard GB	5,000	40
EAH650	12-14 x 1"	Stalgard GB	5,000	52
EAH680	12-14 x 1-1/2"	Stalgard GB	3,000	44
1/4" Diameter Hex Washer Head				
EAH800	1/4-14 x 3/4"	Stalgard GB	3,500	51
EAH820	1/4-14 x 1"	Stalgard GB	3,000	48
EAH835	1/4-14 x 1-1/2"	Stalgard GB	2,000	41
EAH870	1/4-20 x 1"	Stalgard GB	2,000	35
EAH880	1/4-20 x 1-1/2"	Stalgard GB	2,000	42
1/4" Diameter, Undercut Flat Head				
EBM260	1/4-14 x 3/4"	Stalgard GB	4,500	42

Note: For aluminum applications **only**.

Tensile Strength (Mechanical Characteristics)

Size	Pt.	Peak Load (Lbs. of Force)		PSI	
		Yield (Fy)	Ultimate (Fu)	Yield (Fy)	Ultimate (Fu)
#10-16	3	1,766	1,778	93,937	94,580
#12-14	3	2,300	2,320	93,268	94,061
1/4-14	3	3,180	3,197	97,888	98,433
1/4-20	4	3,225	3,266	101,438	102,709

Shear (Lbs. of Force)

Lapped 6061 T6 Aluminum Strips

Size	Pt.	.060"	.090"	.125"	.187"	.250"	.312"	Ult. Shear Strength of Fastener
#10-16	3	834	1,275	1,306	—	—	—	1,152
#12-14	3	668	1,611	1,692	1,744	—	—	1,545
1/4-14	3	769	1,963	2,255	2,275	—	—	2,122
1/4-20	4	—	1,794	2,163	2,176	2,244	2,244	2,139

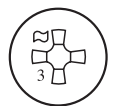
Elco test #1002278 Date: 8/21/2013

Identification

The head marking consists of the number "3" below the Elco® logo.



hex washer head



flat head

Pull-Out (Lbs. of Force)

6061 T6 Aluminum

Size	Pt.	.060"	.090"	.125"	.187"	.250"	.312"
#10-16	3	341	849	1,460	—	—	—
#12-14	3	347	859	1,533	2360*2	—	—
1/4-14	3	386	955	1,657	3205*1	3227*2	—
1/4-20	—	—	1,208	1,846	3291*2	3289*2	3299*2

Mode of Failure Key

Unless noted, the MOF was Material Failure in all test samples
 *1: 3 Test samples had material failure and seven samples had fastener failure
 *2: Fastener failure in all test samples



AllFlex™ 302 Stainless Steel Fasteners

High performance in aluminum applications



302 stainless steel thread-cutting/self-tapping fasteners with Stalgard® GB coating to prevent galvanic reactions and increase corrosion resistance.

Specifications:

- Diameters: #10 – 1/4"
- Head Styles: Hex washer, pan, flat and flat undercut
- Drive Systems: Hex washer and phillips
- Thread/Point Styles: Type F, B or AB
- Material: 302 stainless steel
- Finish: Stalgard GB (Galvanic Barrier) coating

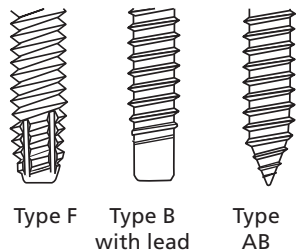
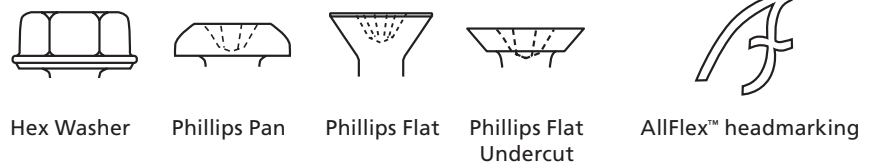
Benefits

- Roll-form or cut own mating threads in aluminum components to eliminate tapping operations and speed installation
- Stalgard GB coating prevents galvanic reaction between stainless steel fastener and aluminum components

Catalog No.	Description	Finish	Drive Size	Carton Quantity	Carton Weight
Type F Thread-Cutting, Hex Washer Head					
EHE310	1/4-20 x 3/4"	Stalgard GB	3/8	2,500	55
EHE312	1/4-20 x 1"	Stalgard GB	3/8	2,500	45
EHE314	1/4-20 x 1-1/4"	Stalgard GB	3/8	2,000	41
Type F Thread-Cutting, Phillips Flat Head					
EHE321	1/4-20 x 1"	Stalgard GB	3/8	2,500	30
Type F Thread-Cutting, Phillips Flat Undercut Head					
EHE110	10-24 x 1/2"	Stalgard GB	#3	5,000	32
EHE211	12-24 x 1/2"	Stalgard GB	#3	5,000	30
Type B Self-Tapping with 1/4" Lead Point, Hex Washer Head					
EHE336	14 x 1-1/2"	Stalgard GB	3/8	1,500	44
Type AB Self-Tapping, Hex Washer Head					
EHE122	10 x 3/4"	Stalgard GB	5/16	2,500	33
EHE124	10 x 1"	Stalgard GB	5/16	2,500	39
EHE220	12 x 3/4"	Stalgard GB	5/16	4,000	34
EHE222	12 x 1"	Stalgard GB	5/16	2,500	41
EHE224	12 x 1-1/2"	Stalgard GB	5/16	1,500	34
EHE342	14 x 1"	Stalgard GB	3/8	2,500	40
EHE344	14 x 1-1/4"	Stalgard GB	3/8	2,000	35
EHE346	14 x 1-1/2"	Stalgard GB	3/8	1,500	43
Type AB Self-Tapping, Phillips Flat Undercut Head					
EHE352	14 x 1"	Stalgard GB	#3	2,500	44
Type AB Self-Tapping, Phillips Flat Head					
EHE232	12 x 1"	Stalgard GB	#3	2,500	33
EHE234	12 x 1-1/2"	Stalgard GB	#3	1,500	39
EHE362	14 x 1"	Stalgard GB	#3	2,500	34
EHE366	14 x 1-1/2"	Stalgard GB		1,500	41
Type AB Self-Tapping, Phillips Pan Head					
EHE240	12 x 3/4"	Stalgard GB	#3	2,500	34
EHE244	12 x 1-1/2"	Stalgard GB	#3	1,500	40
EHE370	14 x 3/4"	Stalgard GB	#3	2,500	35
EHE372	14 x 1"	Stalgard GB		2,000	43

Performance Data

Thread/ Point	Head Style	Screw Dia.	Ultimate Yield	Ultimate Tensile	Ultimate Shear	Screw Material KSI
Type F	Hex Washer	1/4	3203	3274	2259	103
	Flat	1/4	2945	3203	2123	101
	Undercut Flat	#10	1717	1839	1222	105
	Undercut Flat	#12	2243	2322	1604	96
Type B	Hex Washer	#14	3038	3233	2249	99
Type AB	Hex Washer	#10	1602	1616	1165	86
	Hex Washer	#12	2386	2399	1639	97
	Hex Washer	#14	3033	3187	2228	98
	Undercut Flat	#14	2819	3217	2230	99
	Flat	#12	1916	2130	2230	86
	Flat	#14	1916	2130	2230	86
	Pan	#12	2819	3217	2230	99
	Pan	#14	2819	3217	2230	99

Thread and Point Styles

Head Styles & Identification


NOTE: All performance data shown is based on tests performed under laboratory conditions at independent construction testing facilities. The appropriate safety factor should be applied and code requirements factored into specification and use of these fasteners. A safety factor of 4:1 or 25% of the ultimate average values shown is generally accepted as an appropriate working load. Final determination of the appropriate safety factor and use of these fasteners is the sole responsibility of the user, specifying Engineer, Architect or other responsible person designing the connection. Due to a wide variety of application conditions or intervening factors not under our control, we assume no liability for the use of the information provided in this document.

For additional product information and technical assistance, please contact Elco directly at 1-800-435-7213.



Fab-Lok® Fasteners

To maintain panel integrity in high-stress and high-vibration environments



Vibration, either from inside or outside a building, can make ordinary fasteners loosen and back out. Fab-Lok fasteners combine a slotted aluminum sleeve and fastener to provide high resistance to vibration loosening. Excellent for use with insulated panels.

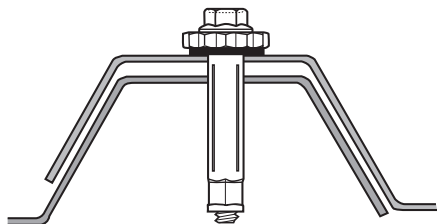
Specifications

- Drive System: Hex
- Materials: Low carbon steel or 300 series stainless steel screw with aluminum sleeve
- Finish: Zinc

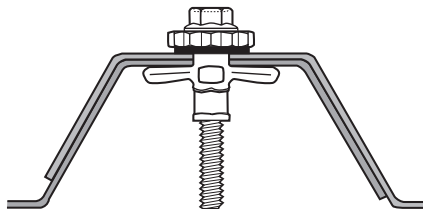
Features & Benefits

- Hex washer head machine screw assembled to a slotted aluminum sleeve and EPDM sealing washer
- After tightening, clamping times remain in place even if screw is removed
- Greater joint integrity with clamping force

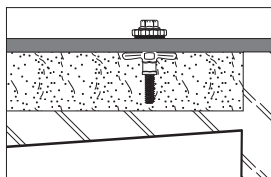
Catalog No.	Description	Penetrating Length	Grip Range	Carton Quantity	Carton Weight
Carbon Steel					
EZJ100	FAS-10-4	1.373"	.062" – .250"	1,000	22
EZJ120	FAS-10-8	1.612"	.250" – .500"	1,000	23
EZJ140	FAS-10-12	1.807"	.500" – .750"	1,000	27
H3 (300 Series) Stainless Steel					
EZJ210	FAC-10-4	1.373"	.062" – .250"	1,000	21
EZJ230	FAC-10-8	1.612"	.250" – .500"	1,000	25
EZJ250	FAC-10-12	1.807"	.500" – .750"	1,000	27
Fab-Lok Drive Tools*					
EZJ900	Holding Sleeve with Socket			1	



before installation



after installation



can be easily used in blind applications

*Fab-Lok fastener is inserted into a 5/16" hole (hole size is not critical) then installed with a power driver equipped with a Fab-Lok holding sleeve, with a socket designed to fit DeWalt® tools DW969K-2, DW968K-2, DW267, DW268 and DW269. Max. 1000 RPM during installation.

Ultimate Shear (lbs)

Screw Material	
Carbon	Stainless
2159	1950

Pull-Out (lbs)

Single Sheet

Catalog #	Recommended Grip Range	Steel Thickness	Ultimate Tension Load (lbs.)	Allowable Tension Load (lbs.)
EZJ100	.062" & .250"	14 ga.	1100	360
		20 ga.	600	200
		26 ga.	600	200
EZJ120	.250" through .500"	14 ga.	1000	330
		20 ga.	800	260
		26 ga.	600	200
EZJ140	.500" & .750"	14 ga.	1100	360
		20 ga.	800	260
		26 ga.	400	130

1. Allowable load capacities listed are calculated using and applied safety factor of 3.0.

Identification



Carbon steel screw:
Elco Flag



Stainless steel screw:
"F" above "2"



UltraCon® Masonry Fastening System

Offers optimal performance in concrete, brick and hollow block applications



UltraCon anchors are available in a variety of styles to meet your needs.

Specifications

- Diameters: 3/16" to 5/16"
- Head Styles: Hex washer, flat, hex flange, TrimFit® hex and TrimFit flat
- Drive Systems: Hex and phillips
- Material: Carbon steel
- Finishes: Blue, silver, and white Stalgard® coating standard; bronze available upon request. Blue and white Stalgard are ACQ-compatible.

Features & Benefits

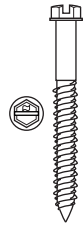
- Installs quickly when using Elco® installation tools
- When all three elements of the system are used, consistent performance and maximum pull-out strengths can be realized
- Stalgard coating provides 1000 hours of salt spray resistance (per ASTM B117)
- Miami-Dade Florida NOA No. 16-0216.04

Boxed Anchors

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

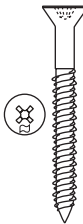
	Cat. No.	Size	Drive System	Quantity Per Shipper	Weight Per Shipper
	Blue Stalgard				

Slotted Hex Washer Head



ELE300-100	3/16 x 1-1/4"	5/16 hex with slot	600	5
ELE310-100	3/16 x 1-3/4"	5/16 hex with slot	600	7
ELE320-100	3/16 x 2-1/4"	5/16 hex with slot	600	8
ELE330-100	3/16 x 2-3/4"	5/16 hex with slot	600	10
ELE340-100	3/16 x 3-1/4"	5/16 hex with slot	600	11
ELE350-100	3/16 x 3-3/4"	5/16 hex with slot	600	13
ELE360-100	3/16 x 4"	5/16 hex with slot	600	13
ELE405-100	1/4 x 1-1/4"	5/16 hex with slot	600	9
ELE415-100	1/4 x 1-3/4"	5/16 hex with slot	600	12
ELE425-100	1/4 x 2-1/4"	5/16 hex with slot	600	14
ELE435-100	1/4 x 2-3/4"	5/16 hex with slot	600	16
ELE445-100	1/4 x 3-1/4"	5/16 hex with slot	600	19
ELE455-100	1/4 x 3-3/4"	5/16 hex with slot	600	21
ELE465-100	1/4 x 4"	5/16 hex with slot	600	22
ELE475-100	1/4 x 5"	5/16 hex with slot	100	5
ELE485-100	1/4 x 6"	5/16 hex with slot	100	6

Phillips Flat Head



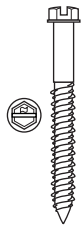
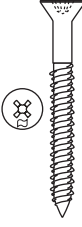
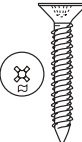
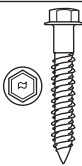
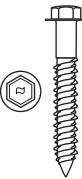
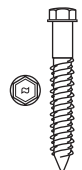
ELF305-100	3/16 x 1-1/4"	#2 phillips	600	4
ELF315-100	3/16 x 1-3/4"	#2 phillips	600	6
ELF325-100	3/16 x 2-1/4"	#2 phillips	600	7
ELF335-100	3/16 x 2-3/4"	#2 phillips	600	9
ELF345-100	3/16 x 3-1/4"	#2 phillips	600	10
ELF355-100	3/16 x 3-3/4"	#2 phillips	600	12
ELF365-100	3/16 x 4"	#2 phillips	600	13
ELF400-100	1/4 x 1-1/4"	#3 phillips	600	8
ELF410-100	1/4 x 1-3/4"	#3 phillips	600	10
ELF420-100	1/4 x 2-1/4"	#3 phillips	600	12
ELF430-100	1/4 x 2-3/4"	#3 phillips	600	14
ELF440-100	1/4 x 3-1/4"	#3 phillips	600	16
ELF450-100	1/4 x 3-3/4"	#3 phillips	600	18
ELF460-100	1/4 x 4"	#3 phillips	600	19
ELF470-100	1/4 x 5"	#3 phillips	100	4
ELF480-100	1/4 x 6"	#3 phillips	100	5



UltraCon® Masonry Fastening System

Offers optimal performance in concrete, brick and hollow block applications

Bulk Anchors

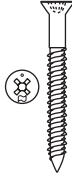
	Cat. No.			Size	Drive Size	Quantity Per Case	Weight Per Case
	Silver Stalgard	White Stalgard	Bronze Stalgard				
Slotted Hex Washer Head							
	ELG341	ELD195	–	1/4 x 1-3/4"	5/16 hex with slot	2,000	38
	ELG371	ELD205	–	1/4 x 2-1/4"	5/16 hex with slot	1,500	34
	ELG401	ELD215	–	1/4 x 2-3/4"	5/16 hex with slot	1,000	27
	ELG431	ELD225	–	1/4 x 3-1/4"	5/16 hex with slot	1,000	31
	–	ELD235	–	1/4 x 3-3/4"	5/16 hex with slot	500	16
	–	ELD255	–	1/4 x 5"	5/16 hex with slot	500	22
	–	ELD265	–	1/4 x 6"	5/16 hex with slot	500	26
Phillips Flat Head							
	ELG521	ELD320	–	3/16 x 1-1/4"	#2 phillips	5,000	35
	ELG551	ELD330	–	3/16 x 1-3/4"	#2 phillips	3,000	28
	ELG581	ELD340	–	3/16 x 2-1/4"	#2 phillips	2,500	29
	ELG611	ELD350	–	3/16 x 2-3/4"	#2 phillips	1,500	21
	ELG641	ELD360	–	3/16 x 3-1/4"	#2 phillips	1,000	16
	ELG671	ELD370	–	3/16 x 3-3/4"	#2 phillips	1,000	19
	–	ELD380	–	3/16 x 4"	#2 phillips	1,000	12
	ELG941	–	–	5/16 x 2-1/4"	#3 phillips	1,000	34
	ELG948	–	–	5/16 x 2-3/4"	#3 phillips	1,000	41
	ELG960	–	–	5/16 x 3-1/4"	#3 phillips	500	24
	ELG979	–	–	5/16 x 4"	#3 phillips	500	29
	ELG992	–	–	5/16 x 5"	#3 phillips	500	16
	ELG998	–	–	5/16 x 6"	#3 phillips	500	21
Phillips Oversized Flat Head – Door Frame Anchor							
	ELG203-050			5/16 x 3"	#3 phillips	250	22
	ELG204-050			5/16 x 4"	#3 phillips	250	29
	ELG205-050			5/16 x 5"	#3 phillips	250	16
	ELG206-050			5/16 x 6"	#3 phillips	250	21
Hex Flange Head (5/8" O.D.)							
	ELC145	ELD275	–	1/4 x 1-3/4"	5/16 hex	1,500	36
	ELC151	ELD285	–	1/4 x 2-1/4"	5/16 hex	1,000	28
	ELC160	ELD295	–	1/4 x 2-3/4"	5/16 hex	1,000	32
	ELC170	ELD305	–	1/4 x 3-1/4"	5/16 hex	500	18
Hex Head with Oversized Washer (.540" O.D.)							
	ELG481	–	–	5/16 x 1-3/4"	5/16 hex	1,000	30
	ELG486	–	–	5/16 x 2-1/4"	5/16 hex	1,000	37
	ELG491	–	–	5/16 x 2-3/4"	5/16 hex	800	22
	ELG496	–	–	5/16 x 3-1/4"	5/16 hex	500	25
	ELG501	–	–	5/16 x 3-3/4"	5/16 hex	500	29
	ELG506	–	–	5/16 x 4"	5/16 hex	500	30
	ELG511	–	–	5/16 x 5"	5/16 hex	250	18
	ELG516	–	–	5/16 x 6"	5/16 hex	250	22
TrimFit® Hex Head (.415 nom. washer O.D.)							
	ELG482	–	–	5/16 x 1-3/4"	5/16 hex	1,500	44
	ELG487	–	–	5/16 x 2-1/4"	5/16 hex	1,000	36
	ELG492	–	–	5/16 x 2-3/4"	5/16 hex	1,000	43
	ELG497	–	–	5/16 x 3-1/4"	5/16 hex	500	25
	ELG502	–	–	5/16 x 3-3/4"	5/16 hex	500	28



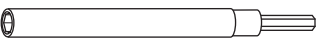
UltraCon® Masonry Fastening System

Offers optimal performance in concrete, brick and hollow block applications

Bulk Anchors, continued

	Cat. No.			Size	Drive Size	Quantity Per Case	Weight Per Case
	Silver Stalgard	White Stalgard	Bronze Stalgard				
TrimFit® Flat Head (.415" nom. O.D.)							
	—	—	ELG612	3/16 x 2-3/4"	#3 phillips	1,500	21
	ELG771	ELD400	—	1/4 x 1-3/4"	#3 phillips	2,000	32
	ELG801	ELD410	—	1/4 x 2-1/4"	#3 phillips	1,500	30
	ELG831	ELD420	ELG832	1/4 x 2-3/4"	#3 phillips	1,000	24
	ELG861	ELD430	ELG862	1/4 x 3-1/4"	#3 phillips	1,000	28
	ELG891	ELD440	ELG892	1/4 x 3-3/4"	#3 phillips	500	16
	ELG921	ELD450	—	1/4 x 4"	#3 phillips	500	17
	ELG945	—	—	5/16 x 2-1/4"	#3 phillips	1,500	47
	ELG955	—	—	5/16 x 2-3/4"	#3 phillips	1,000	38
	ELG965	—	—	5/16 x 3-1/4"	#3 phillips	500	22
	ELG972	—	—	5/16 x 3-3/4"	#3 phillips	500	26
	ELG976	—	—	5/16 x 4"	#3 phillips	500	27
	ELG991	—	—	5/16 x 5"	#3 phillips	250	17

Installation Tools

	Cat. No.	Description	Qty.	Wt.
	ELP100	1000 Tool Kit	5	4
<i>includes:</i>				
	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 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	—
<i>also available:</i>				
	ELY170	8" Drive Sleeve Assembly for 5" and 6" UltraCon Anchors	1	—

Hex-collared SDS Carbide-tipped Drill Bits**



Cat No.	Description	For Anchor Size	Qty. Per Shipper
ELT535-010	5/32 x 5 x 2	3/16"	10
ELT555-010	5/32 x 7 x 4	3/16"	10
ELT630-010	3/16 x 5 x 2	1/4"	10
ELT650-010	3/16 x 7 x 4	1/4"	10

**For use with with rotary hammer drills and 1000 installation tools. One drill bit per tube.

Carbide-Tipped Tanged Drill Bits*



Cat No.	Description	For Anchor Size	Qty. Per Tube
ELT300-010	5/32 x 3-1/2	3/16"	10
ELT310-010	5/32 x 4-1/2	3/16"	10
ELT320-010	5/32 x 5-1/2	3/16"	10
ELT405-010	3/16 x 3-1/2	1/4"	10
ELT415-010	3/16 x 4-1/2	1/4"	10
ELT425-010	3/16 x 5-1/2	1/4"	10
ELT435-010	3/16 x 6-1/2	1/4"	10
ELT445-010	3/16 x 7-1/2	1/4"	10
ELT460-005	1/4 x 4-1/2	5/16"	5
ELT465-005	1/4 x 5-1/2	5/16"	5
ELT475-005	1/4 x 7-1/2	5/16"	5

* For use with hammer drill guns. 5/32 and 3/16" sold in tubes containing 10 bits each; 1/4" bits sold in tubes containing 5 bits each.

UltraCon® Masonry Fastening System

Technical Information

Performance Data

Dia.	Hollow Block 1,924 PSI				Concrete 2,730 PSI				Wood			
	Depth of Embed.	Edge Distance	Pull-out	Shear	Depth of Embed.	Edge Distance	Pull-out	Shear	Depth of Embed.	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"		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"	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



UltraCon® SS4 Masonry Fastening System

410 stainless steel fasteners for concrete, brick and hollow block applications



UltraCon SS4 stainless steel masonry fasteners provide enhanced corrosion resistance and ductility over carbon steel fasteners.

Specifications

- Diameter: 1/4"
- Lengths: 1-1/4" to 4"
- Head style: Hex washer head and TrimFit® flat
- Material: 410 stainless steel
- Finish: Silver Stalgard® coating

Features and Benefits

- Special heat treatment to protect inherent corrosion resistance of the 410 stainless steel material
- Stalgard coating provides 1600 hours of salt spray protection
- Installs with standard 3/16" masonry drill bit
- Miami-Dade Florida NOA No 15-0226.11

Packaged Anchors

Hex Washer Head

Catalog No.	Size	Drive Size	Quantity Per Shipper	Weight Per Shipper
EUH310-100	1/4 x 1-1/4"	5/16 hex washer	600	9
EUH315-100	1/4 x 1-3/4"	5/16 hex washer	600	12
EUH325-100	1/4 x 2-1/4"	5/16 hex washer	600	14
EUH335-100	1/4 x 2-3/4"	5/16 hex washer	600	16
EUH345-100	1/4 x 3-1/4"	5/16 hex washer	600	19
EUH355-100	1/4 x 3-3/4"	5/16 hex washer	600	21
EUH365-100	1/4 x 4"	5/16 hex washer	600	22

Phillips TrimFit Flat Head

Catalog No.	Size	Drive Size	Quantity Per Shipper	Weight Per Shipper
EUF310-100	1/4 x 1-1/4"	#2 phillips	600	8
EUF315-100	1/4 x 1-3/4"	#2 phillips	600	10
EUF325-100	1/4 x 2-1/4"	#2 phillips	600	12
EUF335-100	1/4 x 2-3/4"	#2 phillips	600	14
EUF345-100	1/4 x 3-1/4"	#2 phillips	600	16
EUF355-100	1/4 x 3-3/4"	#2 phillips	600	18
EUF365-100	1/4 x 4"	#2 phillips	600	20

Bulk Anchors

Hex Washer Head

Catalog No.	Size	Drive Size	Quantity Per Shipper	Weight Per Shipper
EUH310	1/4 x 1-1/4"	5/16 hex washer	3000	40
EUH315	1/4 x 1-3/4"	5/16 hex washer	2000	38
EUH325	1/4 x 2-1/4"	5/16 hex washer	1500	34
EUH335	1/4 x 2-3/4"	5/16 hex washer	1000	27
EUH345	1/4 x 3-1/4"	5/16 hex washer	1000	31
EUH355	1/4 x 3-3/4"	5/16 hex washer	500	16
EUH365	1/4 x 4"	5/16 hex washer	500	17

Phillips TrimFit Flat Head

Catalog No.	Size	Drive Size	Quantity Per Shipper	Weight Per Shipper
EUF310	1/4 x 1-1/4"	#2 phillips	3000	34
EUF315	1/4 x 1-3/4"	#2 phillips	2000	32
EUF325	1/4 x 2-1/4"	#2 phillips	1500	30
EUF335	1/4 x 2-3/4"	#2 phillips	1000	24
EUF345	1/4 x 3-1/4"	#2 phillips	1000	28
EUF355	1/4 x 3-3/4"	#2 phillips	500	16
EUF365	1/4 x 4"	#2 phillips	500	17



Crete-Flex® SS4 Masonry Fasteners

For masonry attachments requiring enhanced corrosion resistance



Crete-Flex® 410 stainless steel masonry fasteners provide high shear values, corrosion resistance and ductility for outstanding performance.

Specifications

- Diameters: #14 and 3/16"
- Lengths: 1-1/4" to 6"
- Thread Style: 14-10 heavy-duty
- Head Styles: Hex washer, hex flange, flat and Trimfit® flat
- Drive Systems: Hex and phillips
- Material: 410 stainless steel
- Finish: Silver Stalgard® coating

Features & Benefits

- Special heat treatment to protect inherent corrosion resistance of the 410 stainless steel material
- Stalgard coating provides 1600 hours of salt spray resistance
- Larger .201 root diameter provides exceptionally high shear values
- Miami-Dade County, Florida, NOA No. 15-0226.09

Note: All fasteners are packed 100 per box, 5 boxes per shipper unless otherwise noted.

Catalog No.	Length	Drive System	Drill Bit Size	Shipper Quantity	Shipper Weight
#14 Diameter, Hex Washer Head (.425" washer O.D)					
EMF310-100	1-1/4"	5/16" hex	7/32 x 4-1/2"	500	9
EMF330-100	1-3/4"	5/16" hex	7/32 x 4-1/2"	500	11
EMF350-100	2-1/4"	5/16" hex	7/32 x 4-1/2"	500	14
EMF370-100	2-3/4"	5/16" hex	7/32 x 4-1/2"	500	16
EMF390-100	3-1/4"	5/16" hex	7/32 x 5-1/2"	500	21
EMF410-100	3-3/4"	5/16" hex	7/32 x 5-1/2"	500	22
EMF430-100	4"	5/16" hex	7/32 x 5-1/2"	500	23
EMF450-100	5"	5/16" hex	7/32 x 7-1/2"	100	6
EMF470-100	6"	5/16" hex	7/32 x 7-1/2"	100	7
#14 Diameter, Phillips Flat Head					
EMF690-100	1-1/4"	#3 phillips	7/32 x 4-1/2"	500	8
EMF710-100	1-3/4"	#3 phillips	7/32 x 4-1/2"	500	10
EMF730-100	2-1/4"	#3 phillips	7/32 x 4-1/2"	500	13
EMF750-100	2-3/4"	#3 phillips	7/32 x 4-1/2"	500	14
EMF770-100	3-1/4"	#3 phillips	7/32 x 5-1/2"	500	19
EMF790-100	3-3/4"	#3 phillips	7/32 x 5-1/2"	500	21
EMF810-100	4"	#3 phillips	7/32 x 5-1/2"	500	22
EMF830-100	5"	#3 phillips	7/32 x 7-1/2"	100	6
EMF850-100	6"	#3 phillips	7/32 x 7-1/2"	100	7
#14 Diameter, Hex Flange Head (5/8" washer O.D.)					
EMF340-100	1-3/4"	5/16" hex	7/32 x 4-1/2"	500	13
EMF360-100	2-1/4"	5/16" hex	7/32 x 4-1/2"	500	16
3/16" Diameter, Phillips Flat Head					
EMF610-100	1-1/4"	#3 phillips	5/32 x 4-1/2"	500	4
EMF620-100	1-3/4"	#3 phillips	5/32 x 4-1/2"	500	6
EMF630-100	2-1/4"	#3 phillips	5/32 x 4-1/2"	500	7
EMF640-100	2-3/4"	#3 phillips	5/32 x 4-1/2"	500	9
EMF650-100	3-1/4"	#3 phillips	5/32 x 5-1/2"	500	10
#14 Diameter, TrimFit® Flat Head					
EMF510-100	1-3/4"	#3 phillips	7/32 x 4-1/2"	500	10
EMF530-100	2-1/4"	#3 phillips	7/32 x 4-1/2"	500	13
EMF550-100	2-3/4"	#3 phillips	7/32 x 4-1/2"	500	14

* O.D.; #14 = .268", 3/16" = .200"

Crete-Flex® SS4 Masonry Fasteners

Drill Bits and Fastener Technical Information

Masonry Drill Bits

Cat. No.	Description	Max. Crete-Flex Anchor Length
EMC100	7/32 x 4-1/2" Tanged	2-3/4"
EMC110	7/32 x 5-1/2" Tanged	4"
EMC115	7/32 x 7-1/2" Tanged	6"
EMC120	7/32 x 5-1/2" Hex-shanked SDS	2-1/4"
EMC130	7/32 x 7" Hex-shanked SDS	4"
EMC140	7/32 x 6 x 8-1/4" SDS**	5"
EMC150	7/32 x 9 x 11" SDS**	6"

** EMC140 and EMC150 drill bits are NOT shanked

Approvals/Listings:

Miami-Dade Product Control Approved: Miami-Dade County, Florida, Notice of Acceptance (NOA) 15-0226.09

Performance and Technical Data

Testing in Concrete Beam

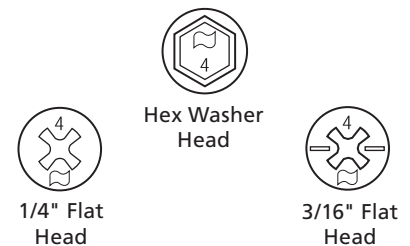
Dia.	Test Load	Test	Edge Distance	Embedment	Ultimate Load Lbs.
3/16"	2,732 PSI	Pull-Out	–	1	651
			–	1-1/4	873
			–	1-1/2	1,231
			–	1-3/4	1,397
	2,735 PSI	Shear	–	2	2,374
#14	3350 PSI	Pull-out	2.5"	1.00"	762
			2.5"	1.75"	2505
		Shear	2.5"	2.00"	2729
			2.5"	1.75"	2591

Testing in Concrete Block

Dia.	Test Load	Test	Edge Distance	Embedment	Ultimate Load Lbs.
3/16"	2,676 PSI	Pull-out	–	1-1/4	839
		Shear	–	1-1/4	1,425
#14	2070 PSI	Pull-out	1.0"	1.25"	780
			2.5"	1.25"	1216
		Shear	1.0"	1.25"	424
			2.5"	1.25"	1324

Identification

In-place inspection can be made by identifying the special Crete-Flex head marking. This marking consists of an Elco® logo and a "4" as shown. The 3/16" diameter is indicated by 2 slots on opposite sides of the drive.



NOTE: All performance data shown is based on tests performed under laboratory conditions at independent construction testing facilities. The appropriate safety factor should be applied and code requirements factored into specification and use of these fasteners. A safety factor of 4:1 or 25% of the ultimate average values shown is generally accepted as an appropriate working load. Final determination of the appropriate safety factor and use of these fasteners is the sole responsibility of the user, specifying Engineer, Architect or other responsible person designing the connection. Due to a wide variety of application conditions or intervening factors not under our control, we assume no liability for the use of the information provided in this document.

For additional product information and technical assistance, please contact Elco directly at 1-800-435-7213.



Aggre-Gator® 300 Series Stainless Bi-Metal Masonry Fasteners

The corrosion resistance of 300 series stainless steel in a threaded concrete anchor



Aggre-gator® anchors provide unmatched corrosion resistance in demanding applications, such as those in coastal or wet areas.

Specifications

- Diameter: 1/4"
- Lengths: 1-3/4" to 4"
- Heads: Hex washer and TrimFit® flat
- Material: 300 (18-8) stainless steel head and shank with fused and hardened steel tapping threads and gimlet point
- Finish: Silver-colored Stalgard® GB (Galvanic Barrier) coating

Features & Benefits

- High in-place value over life of structure
- High strength and ductility
- Offers greater galvanic compatibility in dissimilar metal applications involving aluminum
- Thread profile provides quick cutting and stability during installation
- Best choice for ACQ-treated lumber
- Miami-Dade NOA No. 15-0226.10

Catalog No.	Length	Drive System	Quantity Per Shipper	Weight Per Shipper
1/4 Diameter, Hex Washer Head				
EML315-050	1-3/4"	5/16" hex	300	6
EML325-050	2-1/4"	5/16" hex	300	7
EML335-050	2-3/4"	5/16" hex	300	8
EML345-050	3-1/4"	5/16" hex	300	11
EML365-050	4"	5/16" hex	300	12
1/4 Diameter, TrimFit Flat Head				
EMM310-050	1-3/4"	#3 phillips	300	6
EMM320-050	2-1/4"	#3 phillips	300	7
EMM330-050	2-3/4"	#3 phillips	300	8
EMM340-050	3-1/4"	#3 phillips	300	11
EMM360-050	4"	#3 phillips	300	12

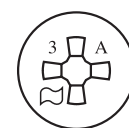
NOTES: Installation tools available: see page 30. Use 3/16" masonry drill bit to install.
50 anchors per box, 6 boxes per shipper.

Approvals:

Miami-Dade NOA No. 13-0924.02
High Velocity Hurricane Zone

Identification

The head markings consists of the number "3", the length code, and the Elco® logo as shown to the right.

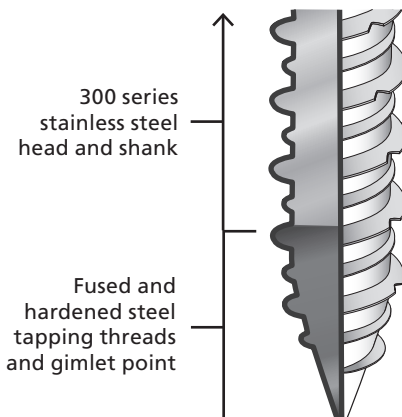


TrimFit® head



hex washer head

Bi-Metal Technology Provides Unmatched Performance



- Head and shank made of 300 series (18-8) stainless steel alloy to provide unmatched corrosion resistance in your toughest applications
- Fused and hardened steel tapping threads make installation easy and hold tight in block and poured concrete
- Coated overall with silver-colored Stalgard GB, a galvanic barrier to protect aluminum components from accelerated corrosion when in contact with 300 series stainless steel



Aggre-Gator® 300 Series Stainless Bi-Metal Masonry Fasteners

The corrosion resistance of 300 series stainless steel in a threaded concrete anchor

Performance Data

Substrate: 2220 PSI Concrete

Anchor Dia.	Min. Edge Dist.	Min. Spacing	Min. Embed.	Allowable Tension (lbs)
1/4"	1.25"	3.0"	1.000"	118
	2.50"	1.5"	1.000"	195
	1.25"	3.0"	1.375"	289
	2.50"	1.5"	1.375"	343
	1.25"	3.0"	1.750"	517
	2.50"	1.5"	1.750"	465
Anchor Dia.	Min. Edge Dist.	Min. Spacing	Min. Embed.	Allowable Shear (lbs)
1/4"	1.50"	3.0"	1.000"	204
	3.00"	1.5"	1.000"	259
	1.50"	3.0"	1.375"	259
	3.00"	1.5"	1.375"	413
	1.50"	3.0"	1.750"	318
	3.00"	1.5"	1.750"	488

Substrate: 3275 PSI Concrete

Anchor Dia.	Min. Edge Dist.	Min. Spacing	Min. Embed.	Allowable Tension (lbs)
1/4"	1.25"	3.0"	1.000"	248
	2.50"	1.5"	1.000"	263
	1.25"	3.0"	1.375"	389
	2.50"	1.5"	1.375"	251
	1.25"	3.0"	1.750"	295
	2.50"	1.5"	1.750"	319
Anchor Dia.	Min. Edge Dist.	Min. Spacing	Min. Embed.	Allowable Shear (lbs)
1/4"	1.50"	3.0"	1.000"	255
	3.00"	1.5"	1.000"	226
	1.50"	3.0"	1.375"	319
	3.00"	1.5"	1.375"	511
	1.50"	3.0"	1.750"	306
	3.00"	1.5"	1.750"	515

Substrate: 1x4 (3/4" Thick) Treated No. 2 SYP attached to 2220 PSI Concrete

Anchor Dia.	Min. Edge Dist.	Min. Spacing	Min. Embed.	Allowable Shear (lbs)
1/4"	2.50"	3.0"	1.5"	200

Substrate: 2x4 (1-1/2" Thick) Treated No. 2 SYP attached to 2220 PSI Concrete

Anchor Dia.	Min. Edge Dist.	Min. Spacing	Min. Embed.	Allowable Shear (lbs)
1/4"	2.50"	3.0"	1.75"	199

Substrate: Concrete Masonry Hollow Block

Anchor Dia.	Min. Edge Dist.	Min. Spacing	Min. Embed.	Allowable Tension (lbs)
1/4"	2.00"	3.0"	1.250"	195
	4.00"	3.0"	1.250"	221
Anchor Dia.	Min. Edge Dist.	Min. Spacing	Min. Embed.	Allowable Shear (lbs)
1/4"	2.00"	3.0"	1.250"	234
	4.00"	3.0"	1.250"	264

Substrate: Grout-Filled Concrete Block

Anchor Dia.	Min. Edge Dist.	Min. Spacing	Min. Embed.	Allowable Tension (lbs)
1/4"	2.00"	3.0"	1.250"	208
	4.00"	1.5"	1.250"	186
	2.00"	3.0"	2.00"	407
	4.00"	1.5"	2.00"	504
Anchor Dia.	Min. Edge Dist.	Min. Spacing	Min. Embed.	Allowable Shear (lbs)
1/4"	2.00"	3.0"	1.250"	259
	4.00"	1.5"	1.250"	352
	2.00"	3.0"	2.00"	591
	4.00"	1.5"	2.00"	597

NOTES

- Edge distances denoted herein shall be measured from the center of the anchor to the edge of the substrate in the direction of, as well as perpendicular to, the direction of the load. Spacing between anchors denoted herein shall be measured center-to-center of anchors.
- Allowable loads suggested herein are only valid when both the minimum anchor center-to-center spacing and the minimum edge distances are complied with.
- Allowable loads suggested herein equal 25% of the average ultimate laboratory test values obtained during testing performed as part of the requirements to obtain this NOA. Final determination of the appropriate working/design loads to be used in a specific project are the sole responsibility of the engineer of record or of the architect of record specifying the use of the product.
- No increase in allowable stress has been incorporated into the values provided in the tables contained herein.

5. Anchors approved under this product approval document have not been tested for use under combined loading.
6. The concrete substrate into which these anchors will be attached shall conform to ACI 301 specifications with strength properties as specified herein.
7. The hollow and grout-filled concrete block substrate into which these anchors will be attached shall be medium weight or normal weight concrete block conforming to ASTM C-90.
8. Combination wood and concrete substrate shall consist of 1 x 4 nominal (3/4" thick) treated No. 2 Southern Yellow Pine attached to concrete substrate conforming to ACI 301 specifications with strength properties as specified herein, or 2 x 4 nominal (1-1/2" thick) treated No. 2 Southern Yellow Pine attached to concrete substrate conforming to ACI 301 specifications with strength properties as specified herein.

NOTE: All performance data shown is based on tests performed under laboratory conditions at independent construction testing facilities. The appropriate safety factor should be applied and code requirements factored into specification and use of these fasteners. A safety factor of 4:1 or 25% of the ultimate average values shown is generally accepted as an appropriate working load. Final determination of the appropriate safety factor and use of these fasteners is the sole responsibility of the user, specifying Engineer, Architect or other responsible person designing the connection. Due to a wide variety of application conditions or intervening factors not under our control, we assume no liability for the use of the information provided in this document.

For additional product information and technical assistance, please contact Elco directly at 1-800-435-7213.



ConFlex® Large Diameter Concrete Screw Anchors

Enhanced ductility allows use in demanding exterior applications



ConFlex® masonry screws are engineered to provide high pull-out and shear values with virtual immunity to brittle failures.

Specifications

- Diameters: Oversized 1/4", 3/8" and 1/2"
- Material: Alloy steel
- Head Style: Hex washer head with locking serrations, flat head, TrimFit
- Thread Style: Double-lead
- Tensile Yield: 92,000 KSI min. (Grade 5); Tensile Ultimate: 120,000 KSI min. (Grade 5)

Features & Benefits

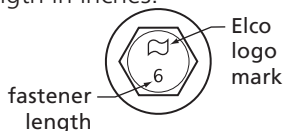
- Flex Technology® heat treat allows virtual immunity to brittle failures,
- Locking serrations under the head provide back-out resistance
- Hardened tip ensures efficient tapping into concrete
- Head markings allow easy inspection
- Install with standard ANSI bits

Catalog No.	Length	Thread Length	Drive Size	Drill Bit Size	Box Quantity*	Box Weight
#14 Diameter, Hex Washer Head - Stalgard® SUB						
EMR155	1-3/4"		3/8" hex	7/32"	1,000	36
EMR165	2-1/4"		3/8" hex	7/32"	1,000	30
EMR175	2-3/4"		3/8" hex	7/32"	800	25
EMR185	3-1/4"		3/8" hex	7/32"	500	23
EMR195	3-3/4"		3/8" hex	7/32"	500	21
#14 Phillips Flat Head - Silver Stalgard®						
EMR110	1-3/4"		#3 Phillips	7/32"	2,000	44
EMR120	2-1/4"		#3 Phillips	7/32"	1,500	35
EMR130	2-3/4"		#3 Phillips	7/32"	1,000	30
EMR140	3-1/4"		#3 Phillips	7/32"	1,000	26
EMR150	3-3/4"		#3 Phillips	7/32"	500	23
#14 TrimFit Flat Head - Silver Stalgard®						
EMR113	1-3/4"		#3 Phillips	7/32"	2,000	51
EMR123	2-1/4"		#3 Phillips	7/32"	1,500	40
EMR133	2-3/4"		#3 Phillips	7/32"	1,000	31
EMR143	3-1/4"		#3 Phillips	7/32"	1,000	27
EMR153	3-3/4"		#3 Phillips	7/32"	500	25
#14 TrimFit Flat Head - White Stalgard®						
EMR124	2-1/4"		#3 Phillips	7/32"	1,500	40
EMR134	2-3/4"		#3 Phillips	7/32"	1,000	33
EMR144	3-1/4"		#3 Phillips	7/32"	1,000	27
3/8" Diameter, Hex Washer Head with Locking Serrations - Stalgard® SUB						
EMR215-050	2-1/2"	2-1/4"	9/16" hex	3/8"	50	5
EMR235-050	3"	2-1/4"	9/16" hex	3/8"	50	6
EMR255-050	4"	3-1/2"	9/16" hex	3/8"	50	7
EMR265-025	5"	3-1/2"	9/16" hex	3/8"	25	4
EMR285-025	7-1/2"	3-1/2"	9/16" hex	3/8"	25	6
1/2" Diameter, Hex Washer Head with Locking Serrations - Stalgard® SUB						
EMR320-050	2-1/2"	2-1/4"	3/4" hex	7/16"	50	8
EMR340-050	3"	2-1/4"	3/4" hex	7/16"	50	9
EMR360-050	4"	3-1/2"	3/4" hex	7/16"	50	11
EMR370-025	5"	3-1/2"	3/4" hex	7/16"	25	7
EMR380-025	6"	3-1/2"	3/4" hex	7/16"	25	7

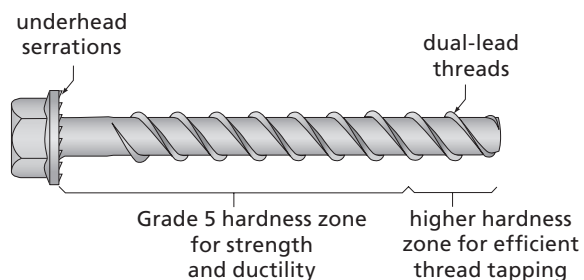
* **Note:** Also available in bulk quantities.

Identification

The head marking consists of an Elco® logo and the fastener length in inches.



Features





ConFlex® Large Diameter Concrete Screw Anchors

Technical Information

ConFlex® Performance Data†

Ultimate Value (Lbs) in Concrete

1,819 PSI				
Dia .	Edge Distance	Embedment	Pull-out	Shear
3/8"	1-7/8" (5d)	1-1/2"	1,364	x
		2"	2,995	x
		2-1/2"	3,226	1,534
		3-1/2"	5,379	2,170
	2-5/8"	1-1/2"	x	x
		2"	x	x
		2-1/2"	3,620	2,459
		3-1/2"	6,070	3,902
	3-3/4" (10d)	1-1/2"	1,232	4,766
		2"	3,296	5,658
		2-1/2"	3,936	6,419
		3-1/2"	6,493	7,047
1/2"	2	1-3/4"	x	x
		2"	x	x
		3"	x	x
		4"	x	x
	2-1/2" (5d)	1-3/4"	2,266	x
		2"	2,706	x
		3"	4,666	4,549
		4"	7,058	6,960
	3-1/2"	1-3/4"	x	x
		2"	x	x
		3"	5,483	5,739
		4"	8,656	8,028
	4"	1-3/4"	x	x
		2"	x	x
		3"	x	x
		4"	x	x
	5" (10d)	1-3/4"	2,090	6,081
		2"	2,875	7,167
		3"	6,042	9,148
		4"	8,732	9,631

† **NOTE:** Indicated pull-out and shear values listed are ultimate values and were obtained in tests conducted by HETI/ Miami, FL, an independent test lab. 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 values are generally accepted as a safe working load.

Testing was done per ASTM E 488 - 96. Additional technical information is available upon request.

Recommended min. embedment, all diameters: 2"

Installation of 3/8" Con-Flex Screw Anchors:

- Standard 3/8" ANSI masonry drill bit (.398" +.000"/-.010")
- Recommended functional masonry drill bit length: minimum 1" more than fastener length

Installation of 1/2" Con-Flex Screw Anchors:

- Standard 7/16" ANSI masonry drill bit (.468" +.000"/-.010")
- Recommended functional masonry drill bit length: minimum 1" more than fastener length

NOTE: All performance data shown is based on tests performed under laboratory conditions at independent construction testing facilities. The appropriate safety factor should be applied and code requirements factored into specification and use of these fasteners. A safety factor of 4:1 or 25% of the ultimate average values shown is generally accepted as an appropriate working load. Final determination of the appropriate safety factor and use of these fasteners is the sole responsibility of the user, specifying Engineer, Architect or other responsible person designing the connection. Due to a wide variety of application conditions or intervening factors not under our control, we assume no liability for the use of the information provided in this document.

For additional product information and technical assistance, please contact Elco directly at 1-800-435-7213.

4,510 PSI				
Dia.	Edge Distance	Embedment	Pull-out	Shear
3/8"	1-7/8" (5d)	1-1/2"	2,497	x
		2"	3,169	x
		2-1/2"	5,063	2,111
		3-1/2"	9,288	2,732
	2-5/8"	1-1/2"		
		2"		
		2-1/2"	5,111	2,667
		3-1/2"	8,438	4,046
	3-1/2"	1-1/2"	2,055	x
		2"	x	5,810
		2-1/2"	4,778	x
		3-1/2"	x	x
1/2"	3-3/4" (10d)	1-1/2"	2,055	3,414
		2"	x	5,810
		2-1/2"	5,111	7,309
		3-1/2"	9,508	8,339
	2"	1-3/4"	3,515	x
		2"	4,388	x
		3"	6,719	2,229
		4"	11,076	3,860
	3" (6d)	1-3/4"	x	x
		2"	x	x
		3"	x	x
		4"	x	x
	3-1/2"	1-3/4"	x	x
		2"	x	x
		3"	7,646	x
		4"	10,234	x
	4"	1-3/4"	2,887	6,787
		2"	4,310	6,678
		3"	8,169	8,489
		4"	11,111	10,942
	5" (10d)	1-3/4"	x	x
		2"	x	x
		3"	x	x
		4"	x	x

Dimensional Properties

3/8" Diameter	1/2" Diameter
Drive system: 9/16" hex	Drive system: 3/4" hex
Washer diameter: 11/16"	Washer diameter: 1.0"
Thread O.D.: .430"	Thread O.D.: .525"
Thread root: .345"	Thread root: .405"
Unthreaded shank dia.: .360"	Unthreaded shank dia.: .426"
Head mark: Elco logo mark and length in inches	Head mark: Elco logo mark and length in inches



Suspender™ Threaded Rod Anchoring System

Anchoring system for threaded rod components



Suspender™ anchors accept 3/8-16 or 1/2" threaded rod and components of piping systems for attachment to steel, masonry, and wood.

Specifications

- Sizes: 3/8-16; adaptor installs 1/2-13
- Lengths: 1" to 2"
- Drive System: Hex
- Material: Carbon steel
- Finish: Plating per ASTM B633 Type II Class 12
- 150 pieces per master carton

Features & Benefits

- One part works in both horizontal and vertical applications
- All parts FM/UL approved
- Decreased part numbers reduce complexity
- Color coded boxes for easy identification

	Rod Size	Steel Thick.	Cat. No.	Description	Listings and Approvals							
					Vertical/Inline Mount				Horizontal/Cross Mount			
					UL Pipe Size	UL Steel Thick.	FM Pipe Size	FM Steel Thick.	UL Pipe Size	UL Steel Thick.	FM Pipe Size	FM Steel Thick.

For Steel Applications*

	3/8-16	.060"–.210"	EZD470-I†	1/4-20 x 1 #3pt.	4"	12 ga.	4"	12 ga.	4"	12 ga.	4"	12 ga.
				1/4-20 x 1 #3pt. w/nuts	4"	16 ga.	4"	16 ga.	4"	16 ga.	4"	16 ga.
	3/8-16	.060"–.210"	EZD490-I†	1/4-20 x 1-1/2 #3pt.	4"	12 ga.	4"	12 ga.	4"	12 ga.	4"	12 ga.
				1/4-20 x 1-1/2 #3pt. w/nuts	4"	16 ga.	4"	16 ga.	4"	16 ga.	4"	16 ga.
	3/8-16	.187"–.500"	EZD510-I†	1/4-20 x 1-1/2 #5pt.	4"	12 ga.	4"	12 ga.	4"	12 ga.	4"	12 ga.
				1/4-20 x 1-1/2 #5pt. w/nuts	4"	16 ga.	4"	16 ga.	4"	16 ga.	4"	16 ga.

For Light-Gauge (LG) Steel

	1/4-20	26 ga. –.187"	EZG610-I	collapsing insert	-	-	-	-	May only be used in vertical/inline mount applications			
	3/8-16	26 ga. –.187"	EZG620-I	collapsing insert	4"	22 ga.	4"	22 ga.				

For Wood Applications

	3/8-16	N/A	EZD650-I	5/16 x 2-1/4	4"	-	4"	-	4"	-	-	-
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For Concrete Applications

	3/8-16	N/A	EZD730-I	5/16 x 2-1/4	-	-	4"	-	-	-	4"	-
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Suspender MP (Multi-Purpose) Anchors for Steel, Wood or Concrete Applications

	3/8-16	N/A	EZD930-I	1/4-10 x 2 Use 7/32" drill bit for concrete	N/A	-	N/A	-	N/A	-	N/A	-
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*These products ship with nuts, for applications that require nuts to qualify for the UL Listing and/or FM Approval shown. NOTE: It is the responsibility of the installer to determine the application-specific details under which a code approval or listing was granted. Contact Elco Construction Products for more information.

Installation Tools

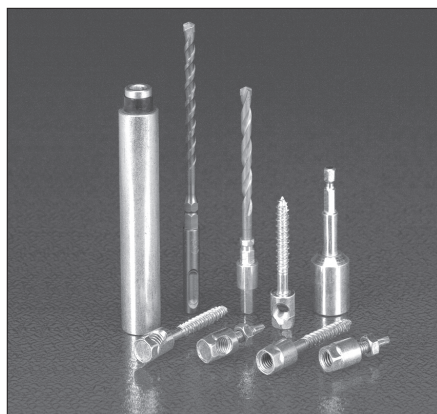
	Cat. No. / Description		Cat. No. / Description		Cat. No. / Description
Steel and Wood Applications		Light-Gauge Steel Applications		Concrete Applications	
	EZE415 Drive Socket		EZE320 25/64 Drill Bit with Stop Collar		EZE420 Drive Sleeve
All Materials			EZE290 Manual Tool		EZE240 Drill Bit Adapter
	EZE270-I 1/2-13 Internally-threaded anchor with 3/8-16 external thread (fits Suspender and HangerMate for 3/8-16 rod). UL/FM Pipe Size N/A.		EZE490 Manual Tool		EZE340 ANSI 1/4" Tanged Drill Bit for Hammer Drills
			EZE330 19/32 Drill Bit with Stop Collar		EZE350 ANSI 1/4" SDS Drill Bit for Rotary Hammer Drills
					EZE360 7/32" Tanged Drill Bit for Hammer Drills
					EZE380 7/32" SDS Drill Bit for Rotary Hammer Drills

UL Report No. VFXT7.EX4649 | FM Report No. 3053870



HangerMate® Threaded Rod Anchoring System

Anchoring system for threaded rod components



HangerMate® anchors accept 1/4-20, 3/8-16 or 1/2" threaded rod and components of piping systems for attachment to steel, masonry, and wood.

Specifications

- Sizes: For use with 1/4-20 and 3/8-16 threaded rod; adaptor installs 1/2" threaded rod
- Lengths: 1" to 3"
- Drive System: Hex
- Material: Carbon steel
- Finish: Plating per ASTM B633 Type II Class 12
- 150 pieces per master carton

Features & Benefits

- Eases installation of sprinkler systems, strut, HVAC, cable trays and various piping systems
- Self-drilling points for steel; in wood applications, no pre-drilling is required
- Many styles UL listed and/or FM approved
- Installs with one universal HangerMate drive socket
- Color coded boxes for easy identification

	Rod Size	Steel Thickness	Cat. No.	Description	UL Pipe Size	UL Steel Thickness	FM Pipe Size	FM Steel Thickness
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For Steel Applications

	1/4-20	.060 – .250	EZG160-I	1/4-20 x 1 #3pt.	N/A	N/A	N/A	N/A
	3/8-16	.060 – .250	EZG471-I	1/4-20 x 1 #3pt. w/nuts	4"	0.060"	4"	16 ga.
	3/8-16	.060 – .250	EZG530-I	1/4-20 x 2 #3pt.	4"	0.125"	4"	0.125"

For Wood Applications

	1/4-20	N/A	EZG315-I	5/16 x 2-1/4	NA	-	NA	-
	3/8-16	N/A	EZG650-I	5/16 x 2-1/4	4"	-	4"	-
	3/8-16	N/A	EZG670-I	5/16 x 3	4"	-	4"	-

For Concrete Applications

	1/4-20	N/A	EZG365-I	5/16 x 2-1/4	NA	-	NA	-
	3/8-16	N/A	EZG730-I	5/16 x 2-1/4		-	4"	-

NOTE: It is the responsibility of the installer to determine the application-specific details under which a code approval or listing was granted. Contact Elco Construction Products for more information.

Installation Tools

	Cat. No.	Description	Qty.
	EZE215	Drive Socket	1
	EZE220	Drive Sleeve	1
	EZE240	Drill Bit Adapter	1
	EZE320	25/64 Drill Bit with Stop Collar	1
	EZE340	ANSI 1/4" Tanged Drill Bit for Hammer Drills	5 / Tube
	EZE350	ANSI 1/4" SDS Drill Bit for Rotary Hammer Drills	5 / Tube
	EZE270-I	1/2-13 Internally-threaded anchor with 3/8-16 external thread (fits Suspenders and HangerMate anchors for 3/8-16 rod). UL/FM Pipe Size N/A.	150 / Master Carton



Suspender Threaded Rod Anchor

Average Ultimate Value (lbs)* Steel Applications

Cat. No.	Rod Size	Anchor Shank	Steel Thickness					
			.062"	.074"	.104"	.125"	.1875"	.250"
EZD470-I	3/8-16	1/4-20	786	1139	1738	2376	4694	NA
EZD470-I w/nuts	3/8-16	1/4-20	3435	4024	4279	4692	5812	NA
EZD490-I	3/8-16	1/4-20	786	1139	1738	2376	4694	NA
EZD490-I w/nuts	3/8-16	1/4-20	3435	4024	4279	4692	5812	NA
EZD510-I	3/8-16	1/4-20	N/A	N/A	N/A	N/A	3677	5207
EZD510-I w/nuts	3/8-16	1/4-20	3435	4024	4279	4692	5812	5909

Light-gage Steel Applications

Cat. No.	Rod Size	Gage				
		26	22	20	18	16
EZG610-I	1/4-20	848	1025	1153	1410	1880
EZG620-I	3/8-16	—	1500	1500	1500	1880

Wood Applications

Cat. No.	Rod Size	Anchor Shank	Doug. Fir	Sthrn. Pine	Hem-fir
EZD650-I	3/8-16	5/16-14	2487	2162	1768

Concrete Applications

Cat. No.	Rod Size	Anchor Shank	3650 PSI Concrete	
			Vertical/In-Line App.	Horizontal/Cross App.
EZD730-I	3/8-16	5/16-14	2188	2767

Suspender MP (Multi-Purpose) Anchors

Material	Value	Value	Hem-fir
Southern Pine	541	14 ga. Steel	1106
16 ga. Steel	880	12 ga. Steel	1754

HangerMate Threaded Rod Anchor

Average Ultimate Value (lbs)* Steel Applications

Cat. No.	Rod Size	Anchor Shank	Steel Thickness					
			.062"	.074"	.104"	.125"	.1875"	.250"
EZG160-I	1/4-20	1/4-20	786	1139	1738	2376	4694	5994
EZG471-I	3/8-16	1/4-20	3435	4024	4279	4692	5812	5909
EZG530-I	3/8-16	1/4-20	786	1139	1738	2376	4694	5994

Wood Applications

Cat. No.	Rod Size	Anchor Shank	Doug. Fir	Sthrn. Pine	Hem-fir
EZG315-I	1/4-20	5/16-14	2487	2162	1768
EZG650-I	3/8-16	5/16-14	2487	2162	1768
EZG670-I	3/8-16	5/16-14	2487	2162	1768

Concrete Applications

Cat. No.	Rod Size	Anchor Shank	3650 PSI Concrete
EZG365-I	1/4-20	5/16-14	2188
EZG730-I	3/8-16	5/16-14	2188

*Performance Testing Notes (both Suspender and HangerMate Anchors):

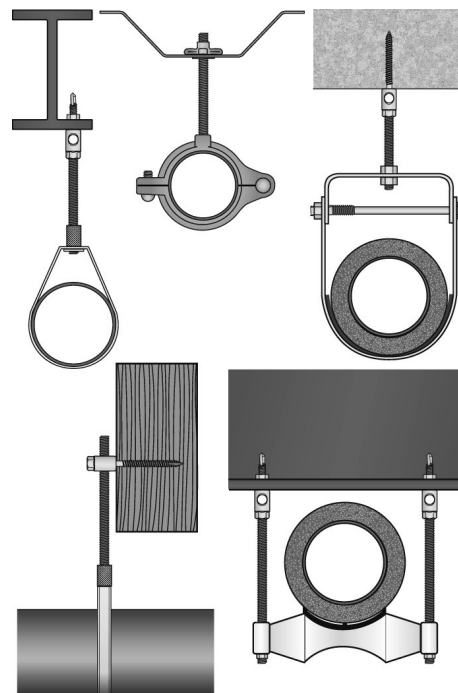
- The loads indicated are average ultimate values achieved under laboratory conditions and appropriate safety factors should be applied for design purposes.
- NFPA (National Fire Protection Assoc.) minimum fastening requirements are five times the weight of a 15-foot section of water filled pipe plus 250 lbs. This is 1475 lbs. for 4" pipe.
- All test values were obtained using 3/8-16 rod. When 1/4-20 rod is used, the strength of the rod may be less than the pull-out values of the anchors.

NOTE: All performance data shown is based on tests performed under laboratory conditions at independent construction testing facilities. The appropriate safety factor should be applied and code requirements factored into specification and use of these fasteners. A safety factor of 4:1 or 25% of the ultimate average values shown is generally accepted as an appropriate working load. Final determination of the appropriate safety factor and use of these fasteners is the sole responsibility of the user, specifying Engineer, Architect or other responsible person designing the connection. Due to a wide variety of application conditions or intervening factors not under our control, we assume no liability for the use of the information provided in this document.

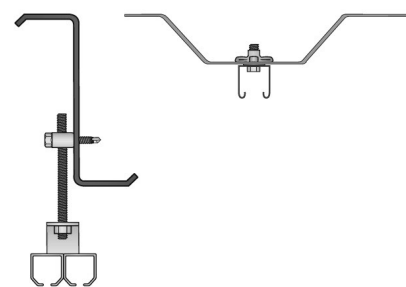
For additional product information and technical assistance, please contact Elco directly at 1-800-435-7213.

Sample Applications

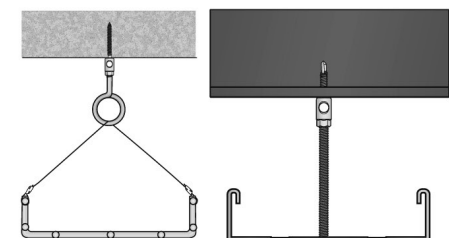
Attach Loop, Clamp Ring and Clevis Hangers and Shoes to Hang Piping for Sprinkler, General Plumbing and Other Systems



Mount Struts and Tracking Systems for Electrical Systems, Ceiling Grids and More



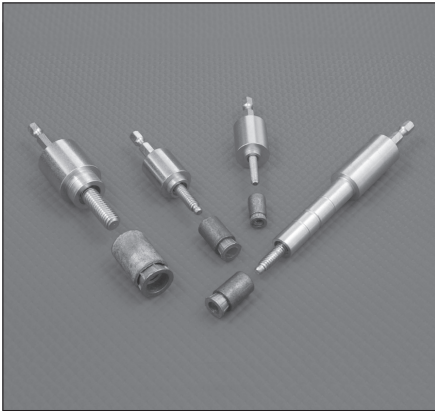
Hang Cable Trays





RapidSet® Tools

The fastest, easiest and most reliable way to install machine screw anchors



Efficient RapidSet® tools eliminate clumsy hammer and setting processes or expensive, slow expander tools.*

Specifications

- For machine screw anchor sizes #10, 1/4" and 3/8"
- Designed for use with power tools, including battery impact drivers
- MAXX model allows placement of 1/4" anchors at various depths (up to 2") below the surface

Features & Benefits

- Power tool does all the work – no pounding with setting tools
- Automatically sets anchor just below the surface
- Maximizes expansion of bottom portion of lead sleeve, which results in consistently high pull-out values

Catalog No.	For Insert-Anchor Size
Standard RapidSet tool	
EZB790	#10-24
EZB800	1/4-20
EZB820	3/8-16
RapidSet MAXX tool	
EZB810	1/4-20
Catalog No.	Description
Repair Kits	
EZB811	Repair Kit for EZB810 (Rapidset MAXX Tool)
EZB801	Repair Kit for EZB800 (Rapidset Tool for 1/4-20 Inserts)

* **Note:** RapidSet tools draw the anchor's internal insert up into the anchor's outer sleeve; this installation process eliminates the need to maintain a back bearing surface (required by hammer setting tools).

THE CONCRETE SOLUTION™

DEWALT
DRIVEN

Powers
ENGINEERED



																				
		Drill® / Standard	Drill® / Bonded Sealing Washers	Drill® / Wood-to-Metal	Drill Screws / Extended Drilling	Tapfast®	Architectural Roof Clip Fasteners	Drill-Flex®	Tap-Flex®	Bi-Flex™	Alumi-Flex™	AllFlex™	Fab-Lok®	UltraCon®	UltraCon® SS4	Crete-Flex® SS4	ConFlex®	Suspender™	HangerMate®	RapidSet® Tools
	DW268 Scrugun Amps: 6.5 No-Load Speed: 0-2500 rpm Clutch: Versa Clutch Torque: 132 in-lbs	#8-#10	#8-#10	#8-#10	#8-#10	#8-#10	#8-#10	#8-#10		#8-#10	#8-#10	#8-#10	✓							
	DW267 Scrugun Amps: 6.5 No-Load Speed: 0-2000 rpm Clutch: Versa Clutch Torque: 164 in-lbs	#12 & 1/4"	#12 & 1/4"	#12 & 1/4"	#12 & 1/4"	#12 & 1/4"	#12 & 1/4"	#12 & 1/4"		#12 & 1/4"	#12 & 1/4"	#12 & 1/4"						#12 & 1/4"	#12 & 1/4"	
	DW269 Scrugun Amps: 6.5 No-Load Speed: 0-1000 rpm Clutch: Versa Clutch Torque: 344 in-lbs	5/16"	5/16"	5/16"	5/16"	5/16"	5/16"	5/16"		5/16"	5/16"	5/16"								
	DC668KA Cordless Screw Driver Voltage: 18 No Load Speed: 0-900/0-2700 rpm Clutch: Versa Clutch Drive: 1/4" hex Torque: 344 in-lbs												✓							
	D25052K SDS Hammer Amps: 6.0 Impact Energy: 1.9 Joules No Load Speed: 0-2,200 rpm Blows/minute: 0-6,200 bpm Optimal Concrete Drilling: 5/32" - 1/2"													3/16"-5/16"	3/16"-5/16"	3/16"-5/16"	3/16"-5/16"	3/16"-5/16"	3/16"-5/16"	
	DCH273P2 Cordless SDS Hammer Voltage: 20V Max Impact Energy: 2.1 Joules No Load Speed: 1-1500 rpm Beats/minute: 0-4600 bpm Optimal Concrete Drilling: 3/16" - 1/2"													3/16"-5/16"	3/16"-5/16"	3/16"-5/16"	3/16"-5/16"	3/16"-5/16"	3/16"-5/16"	
	D25263K SDS Hammer Amps: 8.5 Impact Energy: 3.0 Joules No Load Speed: 1-1450 rpm Blows/minute: 0-5350 Optimal Concrete Drilling: 1/4" - 3/4"																✓			✓
	DCF886M2 Cordless Brushless Impact Driver Voltage: 20V Max No Load Speed: 0-3200 rpm Drive: 1/4" hex Max Torque: 1500 in-lbs Impacts/minute: 0-3,200 ipm--								✓								✓			✓
	DCF880M2 Cordless Impact Wrench Voltage: 20V Max No Load Speed: 0-3200 rpm Drive: 1/2" square Max Torque: 0-2,700 ipm Impacts/minute: 1,800 in-lbs																✓			

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April 2016

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Rev. 04/16

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