SureBuilT
Concrete Forms & Accessories

Precast Products

MADE IN USA

Available

SureBuilT
Concrete Forms & Accessories

Certificate of Compliance

Precast

SB Coil /SB ferrule inserts and hardware; SB Ring-lift anchors and Hardware; UNI-lift anchors and hardware; EASY-lift; Cable loop anchors

Tilt-up

RL22-PRO; RL22-SL lifting anchors and hardware; Pipe braces; brace anchor and brace hardware

This is to certify that the above lifting and handling products has been manufactured and tested in accordance with the quality control plan established by SureBuilT and meets or exceeds **OSHA 29 CFR 1926.704** compared to the published load ratings by SureBuilT.

This document certifies each manufactured product can be related to a quality control plan. The manufacturing quality control test are available on request.

The rated capacities are for mechanical capacity of the listed anchors, inserts and hardware only. Placement, edge distances, embed depth, concrete strength, attachment devices, sling angles and rigging consideration are not part of this certificate of compliance.

Rens Hansort 1-1-2017

SAFETY INFORMATION

Improper Use of Concrete Accessories Can Cause Severe Injury or Death

Read, understand and follow the information in this publication before using any of the SureBuilt Manufacturing concrete accessories displayed herein. When in doubt about the proper use or installation of any SureBuilt Manufacturing concrete accessory, immediately contact the nearest SureBuilt Manufacturing branch for clarification.

SureBuilt Manufacturing products are intended for use by trained, qualified and experienced workmen only. Misuse or lack of supervision and/or inspection can contribute to serious accidents or death. Any application other than those shown in the publication should be carefully tested before use.

The user of a SureBuilt Manufacturing product must evaluate the product application to determine the safe working load and control all field conditions to prevent application of loads in excess of a product's safe working load. The Safety Factors Table shown in this publication are approximate minimum values. The data used to develop safe working loads for products displayed in this publication is a combination of actual testing and/or other industry sources. Recommended safe working loads given for the products in the publication must never be exceeded.

WORN WORKING PART
For safety, concrete accessories must be properly used and maintained. Concrete accessories shown in this publication may be subject to wear, overloading, deformation, intentional alteration and other factors that may affect the device's performance. All reusable accessories must be inspected regularly by the user to deforming if they may be used at the rated safe working load or removed from service. The frequency of inspections depends upon factors such as (but not limited to) the amount of use, period of service and environment. It is the responsibility of the user to schedule hardware inspections for wear and to remove from service when wear is noted.

SHOP OR FIELD MODIFICATION
Welding can compromise a product's safe working load value and cause hazardous situations. Knowledge of materials, heat-treating and welding procedures are necessary for proper welding. Consult a local welding supply dealer for assistance in determining required procedures.

DO NOT WELD TO ANY CASTING unless by a licensed metallurgical engineer. Welding to an iron casting may cause carbides and extreme brittleness, which destroys most of the casting's load value. Since SureBuilt Manufacturing cannot control workmanship or conditions in which modification are done, SureBuilt Manufacturing cannot be responsible for any product altered or modified in the field.

DESIGN CHANGES
SureBuilt Manufacturing reserves the right to change product designs, rated loads and product dimensions at any time without prior notice.

Safety Factors are determined by the degree of risk involved and are established by the following standards or agencies:

1 ACI American Concrete Institute
2 OSHA Occupational Safety and Health Administration
3. ANSI American National Standards Institute

This manual has been designed for use in the Precast/Pre-stressed Concrete Construction industry and specific Safety Factors which account for the inherent risks involved will apply.

SAFETY FACTORS	
Safety Factor	**Use of Product**
5 to 1	Reusable lifting hardware
4 to 1	Inserts for lifting and handling
3 to 1	Permanent connections (UNC threaded items)
2 to 1	Tilt-up inserts for lifting
1.5 to 1	Hold downs and temporary fixings

Each product or load table contained in this manual states the applicable Safety Factor provided in arriving at the Safe Work Load. Use of a product with inadequate Safety Factor is the responsibility of the user. Careful calculation and determination of the actual loads applied are the ultimate responsibility of the user.

COATINGS AND FINISHES AVAILABLE

Products manufactured by SureBuilt Manufacturing can be supplied in several different coatings or finishes to meet your specific environment requirements.

The standard finish will be supplied as noted below when a finish or coating is not specified on an order.

PLAIN Uncoated steel commonly referred to as Plain, Black, Basic or Raw steel. Will corrode or rust when exposed in the environment.

MECHANICAL PLATING An effective means of applying zinc, tin, or other ductile metals or mixtures of ductile metals to metal substrates - usually steel. In the mechanical plating process, impact energy is transferred from a rotating open - ended oblique barrel through glass beads, resulting in the cold-welding of fine metal dust particles to the substrate. The resulting deposit is slightly porous, matte in finish, and provides corrosion protection to the articles so plated without introducing hydrogen embrittlement into the part. It is widely used to provide corrosion protection.

ELECTROPLATING - STANDARD FINISH FOR THREADED PARTS Can be a bright shiny or sometimes dull finish, generally .0002 to .001 inches thick zinc finish. Degree of corrosion protection will vary and is often dependent on the severity of the particular environment. SureBuilt electro-plated products comply with the ASTM B-633 standard.

ASTM B-633 ELECTRO-PLATE COATING OF ZINC ON STEEL		
SERVICE CONDITION	**EXPOSURE**	**COATING THICKNESS**
SC-4	Very Severe	0.0010 in
SC-3	Severe	0.0005 in
SC-2	Moderate	0.0003 in
SC-1	Mild	0.0002 in

HOT DIP GALVANIZED - Semi-bright to a very dull finish, much heavier coating than the Electro-Plating process. HDG provides a higher degree of corrosion protection than the Electro-Plate, but is not suitable for threaded products or any tight fitting items. SureBuilt hot dip galvanized protected products comply with ASTM A-123 or ASTM A-153 standard.

ASTM A-123 - Used for products that are fabricated from rolled, pressed, punched and forged steel shapes, plate, bar, wire or strips 0.125 inch thick and heavier. Zinc finish thickness will vary from 0.002 to 0.005 inches thick.

ASTM A-153 - A coating process for iron and steel products that utilizes a spinning technique to remove excess zinc. Bolts may be processed under this ASTM specification. Coating will vary in thickness from 0.002 to 0.006 inches depending on the “class” specified by the user.

ASTM A-123 HOT DIP GALVANIZE ON IRON AND STEEL		
PRODUCT TYPE	**PRODUCT THICKNESS**	**COATING THICKNESS**
Wire	0.142” to 0.186” dia.	0.002 in
Wire	0.187” to 0.249” dia.	0.003 in
Wire	0.250” dia. or larger	0.004 in
Steel or Plate	0.030” to 0.062” thick	0.002 in
Steel or Plate	0.063” to 0.124” thick	0.003 in
Steel or Plate	0.125” or thicker	0.004 in

ASTM A-153 HOT DIP GALVANIZE ON IRON AND STEEL HARDWARE		
PRODUCT TYPE	**PRODUCT THICKNESS**	**COATING THICKNESS**
Casting	A	0.004 in
Steel—3/16” and thicker	B1	0.004 in
Steel—3/16” and thicker	B2	0.003 in

Safe Guarding Against Embrittlement

Carbon steels, cold-worked steels and heat treated steels are susceptible to embrittlement in electroplating operations from either or both of the cleaning/pickling or coating process. Any steel having been severely cold-worked must be stress-relieved from "strain aging" by baking prior to electroplating.

WARNING: Any steel of significant high strength or high carbon is susceptible to hydrogen embrittlement during the electroplating process and must be baked after the coating is completed to drive out excessive hydrogen.

COATINGS AND FINISHES AVAILABLE

EPOXY COATING A slick, shiny epoxy coating applied to a finished product by means of the electrostatic or fluidized bed method. Coating thickness will vary from .005 inches to .012 inches. Epoxy coatings are very effective corrosion protection in hostile environments such as around or over salt water, or high chemical contaminated areas.

STAINLESS STEEL Stainless steel offers high corrosion resistance in any environment. Type 304 stainless steel is generally used (unless otherwise specified) by SUREBUILT. It is non-magnetic and can be painted without special preparation.

CAUTION: Corrosion may occur on exposed metal products when architectural precast members are etched or acid washed. The amount of corrosion will be dependent on the acidity of the wash and/or the type of chemicals used.

EMBRITTLEMENT INFORMATION

Carbon steels, cold-worked steels and heat treated steels are susceptible to embrittlement in both electroplating and hot dip galvanizing operations. Any severely cold-worked steel must be stress-relieved from strain aging by baking prior to electro-plating or hot dip galvanizing. Any steel with significant high strength or high carbon content is susceptible hydrogen embrittlement during electro-plating or hot dip galvanizing. It must be baked after the coating is applied to drive out excessive hydrogen.

WARNING: Products manufactured from high carbon steel that is electro-plated or hot dip galvanized must be properly heat treated to minimize embrittlement. Failure to properly heat treat these products may compromise their safe working loads and result in a premature failure of the product.

Applicable ASTM documents:

ASTM A-143	"Safe Guarding Against Embrittlement"
ASTM A-153	"Zinc Coating (hot dip) on Iron and Steel Hardware"
ASTM A-165	"Electro-Deposited Coatings of Cadmium on Steel"
ASTM B-633	"Electro-Deposited Coatings of Zinc"

Example Coating Specifications:

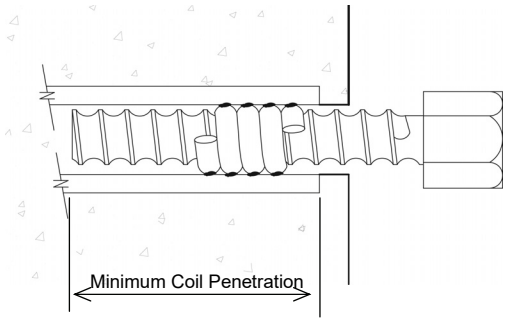
Electro-Plate - "Electro-Plate to ASTM B-633 Specification. Service Condition SC-4.
Provide embrittlement relief, if necessary."

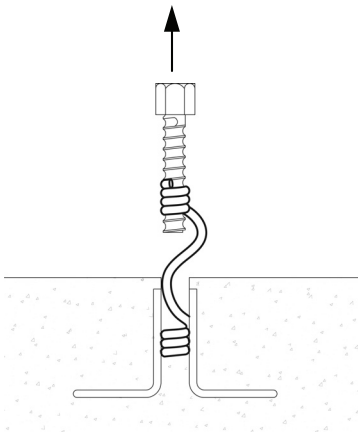
Hot Dip Galvanize - "Hot Dip Galvanize to ASTM A-153, Class A.
Provide embrittlement relief, if necessary."

INSERT AND CONCRETE FAILURES

MINIMUM COIL BOLT PENETRATION FAILURES

The most common type of insert failure is caused by the lack of sufficient bolt penetration through the coil of the insert. Under applied load, inadequate bolt penetration of the insert coil will cause the upper part of the coil to unwind and pull out of the insert. This is commonly referred to as the "corkscrew" effect





COIL BOLT CONSIDERATIONS

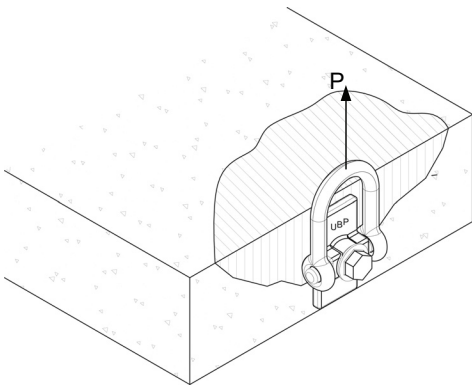
1. Failure to properly tighten a coil bolt can result in the inability of the coil bolt to fully penetrate the coil of the insert.
2. Excessive insert setback in the concrete can result in the inability of the coil bolt to fully penetrate the coil of the insert.
3. Worn threads on a coil bolt will render the bolt ineffective and will result in inadequate thread engagement.
4. A coil bolt of inadequate length to fully penetrate the Insert coil will produce a corkscrew type of failure. The insert coil cannot carry the required load when only partially engaged.
5. Reference the Minimum Coil Penetration Table on page 24.

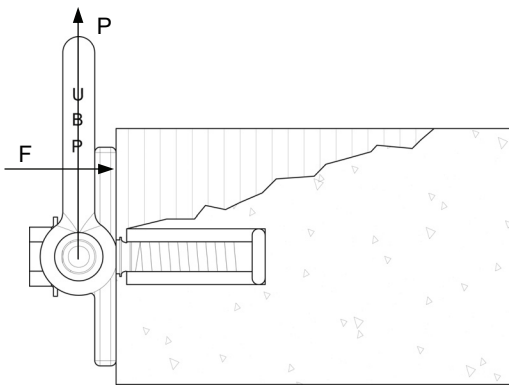
IMPORTANT: In precast concrete plant operations, coil bolts should be periodically inspected and replaced if signs of wear or bending are present. Worn or bent bolts should be immediately discarded. Never use a worn or bent bolt for any purpose and never attempt to straighten a bent bolt.

EDGE LIFTING FAILURES

When an insert/anchor is located in the edge of a concrete panel for the purpose of lifting and handling of the panel, the concrete on the topside of the insert/anchor will carry the entire applied load unless special provisions are implemented. The upward force on an insert, from the bolt and compressive force from the lifting plate, combine to quickly overload the concrete on the topside of the insert/anchor. The loss of the concrete above the insert/anchor can result in the insert breaking and loss of the panel.

One means of increasing edge lift capacity is to strengthen the concrete over the insert with shear bars or stirrup assemblies. This process will reinforce the concrete, preventing total loss of the concrete and allow the insert/anchor to remain in the panel. Always use the proper style and capacity insert/anchor for edge lifting. Never use a two-strut insert. A properly selected insert/anchor will not break if the concrete above it fails. This will allow the panel to be positioned with only minor patching required.





INSERT AND CONCRETE FAILURES

LIFTING HARDWARE CONSIDERATIONS

All lifting hardware is subject to wear, abuse, bending, overloading, alterations and corrosion. The user of these products must continually inspect the product to determine its usable condition. If the product shows any of the problems noted above or is not in good working condition, the product should be discarded or returned to SureBuilt for repair and/or service. The frequency of inspections should be determine by how often the product is used, period of use and the environment in which it is used.

Example:
When SUREBUILT Double Lift Plate (UDSLP1), 1” diameter lifting plate is pulled at an angle producing 3000 lb vertical load and 3000 lb horizontal load, then the following information applies:

V = (2e/d) H = 1.0 (3000) = 3,000 lb additional load on the insert due to the horizontal force component.

Total applied load = P_T

P_T = Vertical component load + (2e/d) H
P_T = 3000 + 3000 = 6,000 Total Tension Load

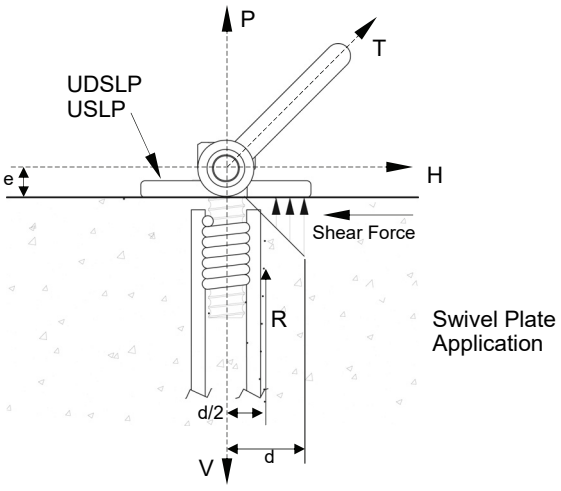
Must use an insert with a SWL greater than 6,000 lb.

LIFTING HARDWARE VALUES

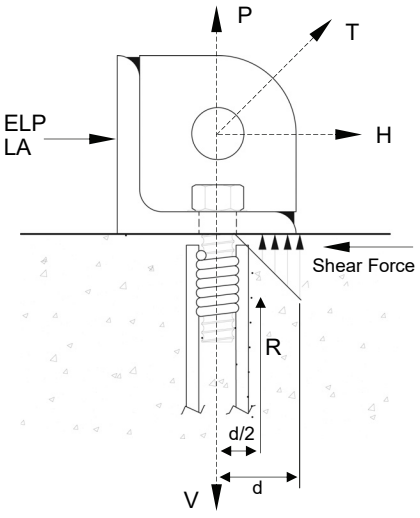
TYPE OF LIFTING PLATE	BOLT DIAMETER	(2e/d)
Part #	in.	
USLP34	3/4	.67
USLP1	1	.67
UDSLP1	1	1.00
UDSLP114	1-1/4	.75
UDSLP112	1-1/2	.75
ELP	3/4	3.00
ELP	1	3.00
LA	1	2.00
LA	1-1/4	2.00
LA	1-1/2	2.00

LIFTING PLATES

When using lifting plates in conjunction with cast-in-place inserts, a combination of forces with small lever arms become factors of concerned. Reference the sketches shown below. Dimension "d” is an assumed constant subject to the location of "R", the resultant force exerted by the reaction of the plate on the concrete.



Swivel Plate Application



Lift Plate Application

Lifting Plates Considerations:

1. If the lifting plate is loosely tightened, the location of "R" will be at the extreme edge/corner of the plate and "d" becomes plate width divided by 2.
2. If the lifting plate is properly tightened down with the attachment bolt, the generally accepted stress pattern on the plate will be triangular or trapezoidal.
3. During initial and low loads the "R" force moves from the toe of the plate towards the center of the plate. As the load increases, the plate attempts to flex. The maximum movement is most likely to the midpoint of the plate, between the bolt centerline and the toe of the plate. Taking a conservative approach, "d divided by 2" is the theoretical location of the "R" force, thus resulting in a higher load to be added to the vertical component load.

INSERT AND CONCRETE FAILURES

4. Using basic equations, a pair of force couples must be equal to zero:
   H(e) = V(d/2) and V = (2e/d)H
   V = vertical force on the insert.
   H =horizontal force on the lifting plate.

Lifting plate example calculation:
Values for (2e/d) H - Reference table on page 7.
When a 1" diameter SUREBUILT double Swivel Lift Plate is pulled at an angle producing 3,000 lb vertical load and 3,000 lb horizontal load, then the application of the information on the previous page would be as such:

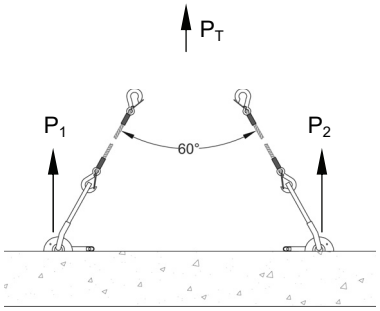
V = (2e/d) H = 1.0 x 3,000 = 3,000 lb additional load on the insert due to the horizontal force component.
Total applied load = P_T
P_T = Vertical component load + (2e/d) H
P_T = 3000 + 3000 = 6,000 Total Tension Load

In this example, an insert with a safe working load greater than 6,000 lb must be used.

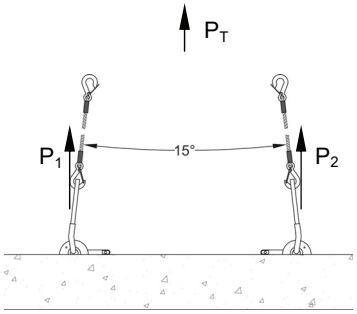
INCLINED SLINGS
When rigging is selected where the sling lines are inclined, it is important to measure the angle β (beta). The angle will cause an increase in the anchor loading due to the horizontal force components.

Reference the sketched examples:
1. The angle is 60° and from the table below, the load factor is 1.16.
   Therefore, P1 load = 1.16 x weight of the concrete element divided by 2.
2. The angle is 15° and from the table below, the load factor is 1.01.
   Therefore, P1 load = 1.01 x weight of the concrete element divided by 2.

SLING ANGLE LOAD FACTORS								
Sling Angle β	120°	105°	90°	75°	60°	45°	30°	15°
Load Factor	2.00	1.64	1.41	1.26	1.16	1.08	1.04	1.01



1. 60° Sling Angle



2. 15° Sling Angle

β = 60°
β = 15°

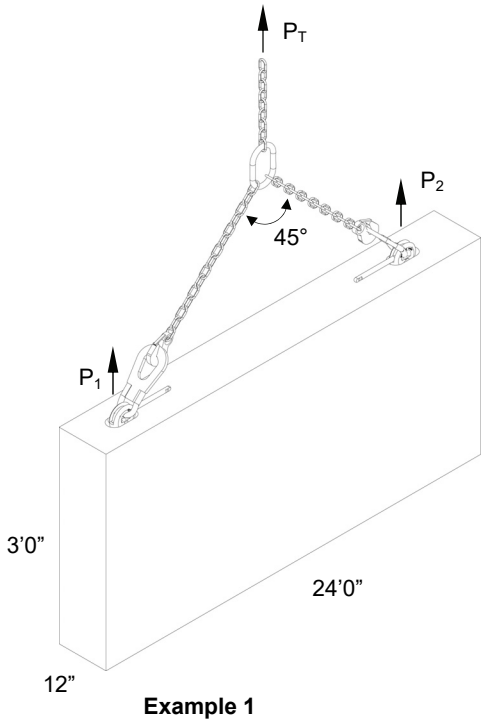
INSERT AND CONCRETE FAILURES

Example1: Two part chain slings calculations:
Determine the anchor load, anchor size and concrete psi required for a rectangular concrete beam 12” deep, 3’ wide and 24’ long. The beam has form adhesion at the bottom surface only and a sling angle of 45°.

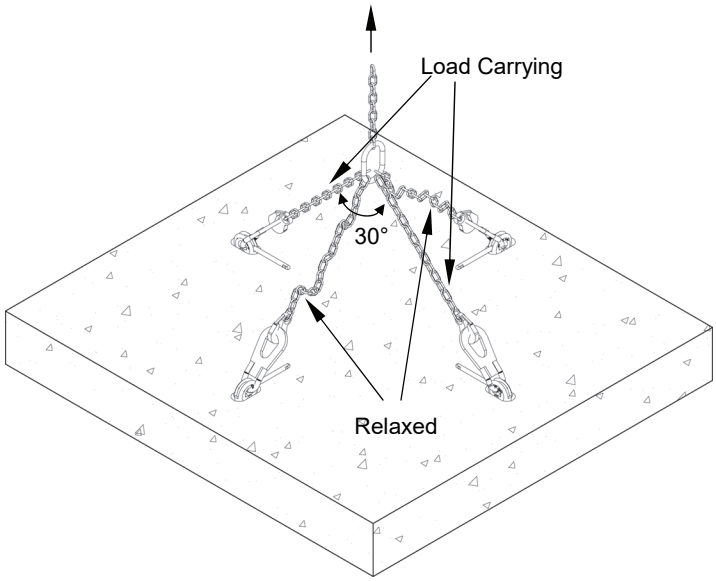
Concrete dead weight	= 12” /12” x 3’ x 24’ x 150 lb	= 10,800 lb
Form adhesion (steel form)	= 12” /12” x 24’ x 25 lb	= 600 lb
Total Load (P_T)		= 11,400 lb

Now apply the load factor for the 45° sling angle and realizing that
$P1 = P2 = P_T$ then P1 = 11,400/2 x 1.08 = 6,156 lb per anchor

To adequately lift a handle, the example beam would require an anchor like the 4 ton Two-Hole Anchor (Part# THA584) with tension bar rated at 8,000 lb SWL in 3,000 psi concrete.



Example 1



Example 2

Example2: Four slings attached at slab corners calculations:
When four fixed length slings are used to lift and handle a concrete element, often one of the slings will be longer than the rest. This will force two of the embedded anchors to carry the total load and the other two anchors to do little more than keep the slab balanced.

Determine the anchor load, anchor size and concrete psi required for a slab 12’ x 11’ x 16” using a sling incline angle of 30° and having form adhesion at the bottom surface only.

Concrete dead weight	= 12’ x 11’ x 16”/12” x 150 lb	= 26,400 lb
Form adhesion (steel form)	= 12’ x 11’ x 20 lb	= 2,640 lb
Total Load (P_T)		= 29,040 lb

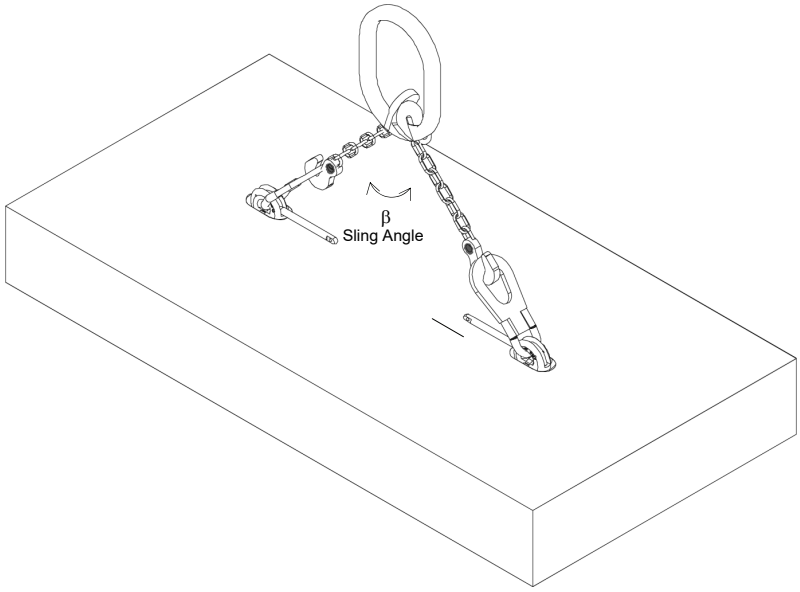
P1 = 29,040/2 (only two anchors working) x 1.04 per anchor = 15,100 lb per anchor

To adequately lift and handle, the example slab would require an anchor like the 10 ton x 10” long Ring Lift Anchor (Part# DFFA3410) rated at 20,000 lb SWL in 3,500 psi concrete.

INSERT AND CONCRETE FAILURES

SLING ANGLE FACTOR
Additional forces come to bear on an anchor from oblique pulls caused by the sling angle. As the angles increases, the cable load increases and transfers an even larger load to the anchor. Angles greater than 120° are not safe and must not be used. To calculate the load on the anchor, refer to the accompanying table. Move across the table to the sling angle being used and multiply the corresponding magnification factor by the dead load of the precast element.

SLING ANGLE LOAD FACTORS								
Sling Angle β	120°	105°	90°	75°	60°	45°	30°	15°
Load Factor	2.00	1.64	1.41	1.26	1.16	1.08	1.04	1.01



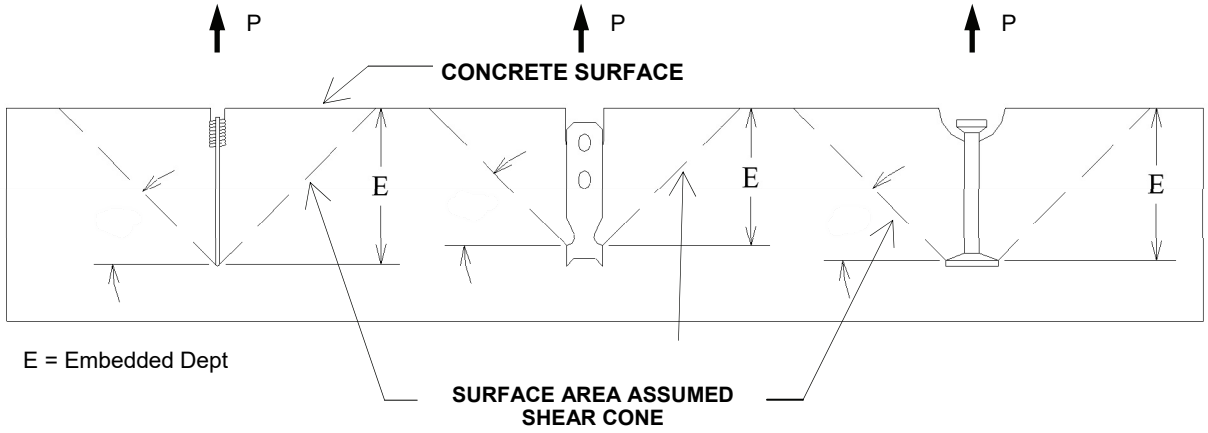
ADJUSTING FOR CONCRETE STRENGTH
Note: These factors are for use with tension applications only. Do not use these factors for shear applications without consulting with the SureBuilt Engineering Department to make sure there are no other limitations.

To convert the allowable tension load for an unreinforced anchor from listed concrete strength of 3,500 psi to a greater or lesser concrete strength, multiply 3,500 psi by the factor indicated below. Note: To maintain the needed 4:1 safety factor the new value must be less than 25% of the listed ultimate mechanical value of the selected anchor.

CONCRETE STRENGTH ADJUSTMENT FACTORS	
TO INCREASE FOR GREATER CONCRETE STRENGTH	
CONVERT FROM	**MULTIPLY BY**
3,500 psi to 4,000 psi	1.07
3,500 psi to 4,500 psi	1.13
3,500 psi to 5,000 psi	1.19
TO DECREASE FOR LESSER CONCRETE STRENGTH	
CONVERT FROM	**MULTIPLY BY**
3,500 psi to 3,000 psi	0.92
3,500 psi to 2,500 psi	0.84
3,500 psi to 2,000 psi	0.75

CONCRETE SHEAR CONE

The Concrete Shear Cone is that area of concrete around the Insert/Anchor that withstands the load stress during the loaded lift.



The user should always check to assure enough concrete is available to provide a full shear cone and determine which is least, mechanical strength of insert/anchor or available concrete shear cone. The lesser value will determine SWL.

TYPICAL WIRE SIZES & STRENGTHS

Nominal Wire Diameter	Wire Grade	AISI & SAE Number	Approximate Minimum Yield Tension	Approximate Minimum Ultimate Tension	Approximate Minimum Shear
in.			lb	lb	lb
0.440	MHC	1040	13,000	15,000	10,200
0.375	LC	1018	8,250	9,350	6,360
0.375	LC	1008	6,500	8,250	5,700
0.306	LC	1018	5,400	6,200	4,240
0.306	LC	1008	4,400	5,450	3,750
0.283	LC	1018	4,700	5,400	6,650
0.262	LC	1008	2,700	3,500	2,400
0.223	MHC	1035	3,400	4,000	2,708
0.218	LC	1008	2,100	2,800	1,870

MINIMUM COIL BOLT PENETRATION

The most common type of failure seen in the field is the lack of coil bolt penetration into the coil of the insert. Inadequate bolt penetration through the coil will cause the upper portion of the coil to pull-out of the insert; generally leaving the bottom portion of the coil intact with the insert. Coil will actually unwind in the mid portion of the coil and will usually break near the mid portion. This is commonly referred to as the "corkscrew" effect because the coil tends to unwind.

COIL BOLT PENETRATION CONSIDERATIONS

- Failure to properly tighten bolt or excessive set-back of insert can result in the inability of the coil bolt to fully penetrate the coil.
- Excessively worn threads on a coil bolt near the bottom will render the lower threads ineffective and result in inadequate thread engagement. This will produce same results as a short bolt or excessive set-back and cause the coil to fail in the corkscrew manner.
- A bolt which is shorter than required is the most common fault, producing the "corkscrew" type failure. The coil cannot possibly carry the required loading when only partially engaged.

BOLT FACTORS AFFECTING SAFETY

In precast plant operations, bolts should periodically be *replaced. Excessively worn bolts can cause several problems for the user including:*

- Brittle type bolt failure
- Poor fit in mating coil
- Slippage in coil
- Coil penetration failure

Similarly, bent bolts should immediately be discarded. Never use a bent bolt for any purpose. Never re-straighten a bent bolt.

LIFTING HARDWARE CONSIDERATIONS

All lifting hardware such as, lifting plates, swivel lifting plates, Ring Lift and Uni-Lift hardware are subject to:

- Excessive wear
- Field abuse (hammering, prying)
- Bending
- Overloading
- Welding
- Corrosion
- Alterations

Users of these products must periodically inspect to determine if product is in good working condition. If not in good working condition, product should be discarded or returned to SureBuilt Manufacturing for new parts replacement. Inspection procedures should be determined by user's Quality Control.

Coil Inserts

PRODUCT INDEX

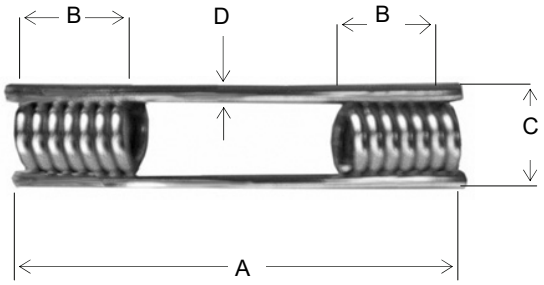
MADE IN USA

All specifications are subject to changes.

SureBuilt stands behind each coil insert. All inserts are made of medium carbon steel; electro galvanize finish is available. Specs are based on a 4:1 Safety Factor. Consult the Safety Information Guide for information on how to properly use these products.

TWO STRUT COIL INSERTS

- Can be utilized in many situations when it is not required that the ends of the tie be back away from the face of the wall
- Widely versatile and economic to use
- Struts fabricated from medium carbon steel wire
- Helix coils are electrically welded to the struts resulting in a consistently safe weld
- SWL based on 1/2" setback from face of concrete

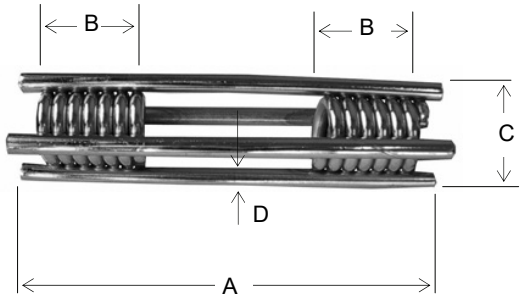


TWO STRUT COIL INSERTS							
BOLT DIAMETER	S.W.L. * TENSION	HEIGHT (C)	COIL LENGTH (B)	WIRE DIAMETER (D)	LENGTH (A)	MIN. EDGE DISTANCE	PART NUMBER
in.	lb	in.	in.	in.	in.	in.	#
3/4	4,500	1-5/8	1-3/4	.375	6	8	**SBSCT346**
1	6,000	2-1/4	2-1/16	.440	6	8	**SBSCT016**
1-1/4	7,500	2-1/2	2-1/16	.440	8	10	**SBSCT1148**

*Specs based on a 4:1 Safety Factor in 3000 psi concrete (21 MPa)

FOUR (SIX) STRUT COIL INSERTS

- Can be utilized with heavy crane-handled forms or concrete elements
- Struts fabricated from medium carbon steel wire
- Helix coils are electrically welded to the struts resulting in a consistently safe weld
- SWL based on 1/2" setback from face of concrete



FOUR/SIX STRUT COIL INSERTS (HEAVY DUTY)									
BOLT DIAMETER	S.W.L. * TENSION	S.W.L. * SHEAR	HEIGHT (C)	STRUTS	COIL LENGTH (B)	WIRE SIZE (D)	INSERT LENGTH (A)	MIN. EDGE DISTANCE	PART NUMBER
in.	lb	lb	in.	#	in.	in.	in.	in.	#
3/4	6,000	6,000	1-5/8	4	2-1/16	.375	6	8	**SBHCT3464S**
1	9,000	9,000	2-1/16	4	2-1/16	.375	8	10	**SBHCT018**
1	9,000	9,000	2-1/16	4	2-1/16	.375	12	15	**SBHCT0112**
1-1/4	9,000	12,000	2-1/2	4	2-1/16	.440	8	10	**SBHCT1148**
1-1/4	13,500	12,000	2-1/2	4	2-1/16	.440	12	15	**SBHCT11412**
1-1/4	20,000	20,000	2-1/2	6	3	.440	10	16	**SBHCT1148**
1-1/4	20,000	20,000	2-1/2	6	3	.440	12	16	**SBHCT11412**

*Specs based on a 4:1 Safety Factor in 3000 psi concrete (21 MPa)
Use additional tension and shear bar if edge distance is less than minimum specified.

WARNING: Two-strut coil inserts are not recommended for use as an edge lifting insert.

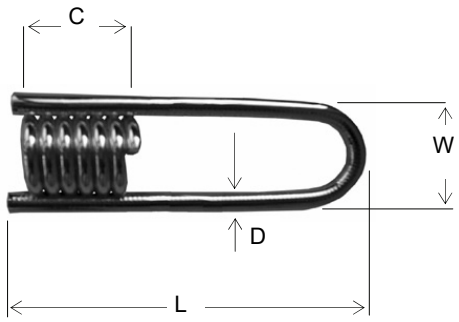
MADE IN USA

See minimum coil bolt penetration, page 24.

STRAIGHT COIL LOOP INSERTS

- Helix coils are electrically welded to the struts resulting in a consistently safe weld
- Struts fabricated from medium carbon steel
- SWL based on 1/2" setback from face of concrete

Note: SUREBUILT does not recommend the use of 1/2" diameter bolts for lifting.



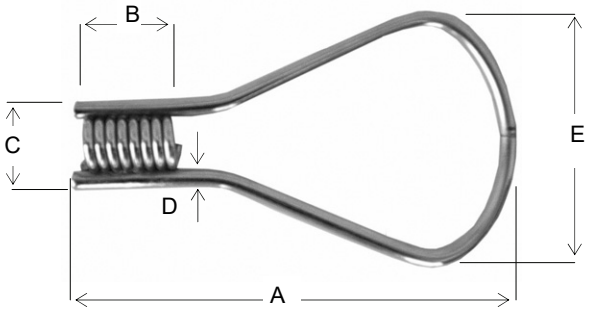
STRAIGHT COIL LOOP INSERTS						
BOLT DIAMETER	LENGTH (L)	WIDTH (W)	COIL LENGTH (C)	WIRE DIA. (D)	S.W.L. * TENSION	PART NUMBER
in.	in.	in.	in.	in.	lb	#
1/2	4	1-5/16	1-3/16	.225	2,250	SBCLIS124PL
1/2	6	1-3/8	1-3/16	.306	3,600	SBCLIS126PL
3/4	4	1-5/8	1-5/8	.306	3,750	SBCLIS344PL
3/4	6	1-7/8	1-5/8	.375	4,500	SBCLIS346PL
1	4	2-1/16	2	.375	3,750	SBCLIS14PL
1	6	2-1/16	2	.375	4,500	SBCLIS16PL
1	8	2-1/16	2	.375	4,500	SBCLIS18PL

*Specs based on a 4:1 Safety Factor in 3000 psi concrete (21 MPa)

SINGLE FLARED COIL LOOP INSERTS

- Develops loads in low strength concrete better than straight loops
- Develops a load over a greater area of concrete than other inserts.
- Struts fabricated from medium carbon steel wire
- Helix coils are electrically welded to the struts resulting in a consistently safe weld
- SWL based on 1/2" setback from face of concrete

Warning: The single flared coil loop should not be used for edge lifting of precast sections.



SINGLE FLARED COIL LOOP INSERTS							
BOLT DIAMETER	LENGTH (A)	S.W.L. * TENSION	LOOP HEIGHT (E)	COIL WIDTH (C)	COIL LENGTH (B)	WIRE DIAMETER (D)	PART NUMBER
in.	in.	lb	in.	in.	in.	in.	#
3/4	6	4,750	3-1/2	1-3/4	1-3/4	.375	SBSFCLI346PL
3/4	9	4,750	5-1/2	1-3/4	1-3/4	.375	SBSFCLI349PL
1	9	4,750	5-1/2	2	2-1/16	.375	SBSFCLI19PL
1	9	8,000	5-3/4	2-1/2	2-1/16	.440	SBHSFCLI19PL
1	12	4,750	5-1/2	2	2-1/16	.375	SBSFCLI112PL
1	12	8,000	5-3/4	2-1/2	2-1/16	.440	SBHSFCLI112PL
1-1/4	12	4,750	5-3/4	2-1/2	2-5/16	.375	SBSFCLI114PL
1-1/4	12	8,000	5-3/4	2-1/2	2-5/16	.440	SBHSFCLI114PL
1-1/2	12	8,000	5-3/4	2-3/4	2-5/16	.440	SBSFCLI11212PL

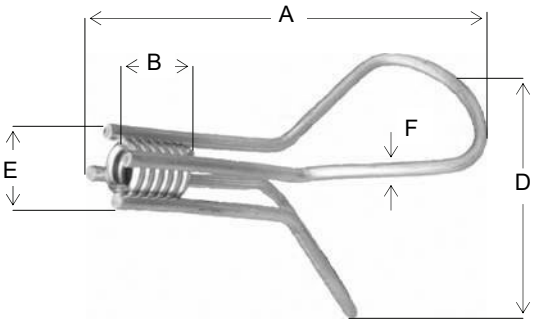
*Specs based on a 4:1 Safety Factor in 3000 psi concrete (21 MPa)

WARNING: Two-strut inserts are not recommended for lifting .

MADE IN USA

All specifications are subject to changes.

DOUBLE FLARED COIL LOOP INSERTS



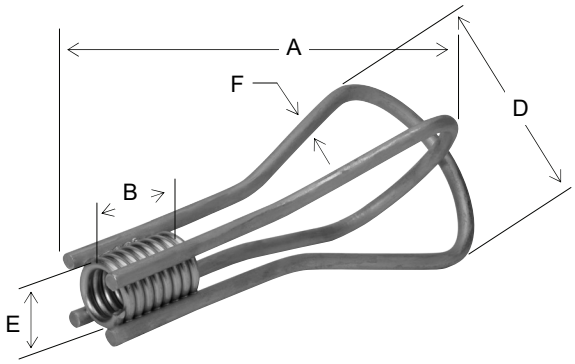
- Primarily used for lifting precast sections
- Greater capacity than the single loop
- Second loop welded to same coil for extra strength
- Gives 2X the cross-sectional area of steel embedment while increasing shear cone surface area
- Gap between the two loops allows for the straddling of reinforcing steel.
- Available in bolt diameters of 1, 1-1/4 and 1-1/2 inches
- Minimum edge distance is 15 inches
- SWL based on 1/2" setback from face of concrete

DOUBLE FLARED LOOP COIL INSERTS							
BOLT DIAMETER	INSERT LENGTH (A)	S.W.L. TENSION	COIL DIA. (E)	COIL LENGTH (B)	WIRE DIAMETER (F)	LOOP DIA. (D)	PART NUMBER
in.	in.	lb	in.	in.	in.	in.	#
1	12	9,500	2-1/16	2-1/16	.375	5-1/2	SBDFCLI112PL
1	12	13,500	2-1/4	2-1/16	.440	5-3/4	SBHDFCLI112PL
1-1/4	12	9,500	2-5/16	2-1/16	.375	5-3/4	SBDFCLI11412PL
1-1/4	12	13,500	2-1/2	2-1/16	.440	5-3/4	SBHDFCLI11412PL
1-1/2	12	9,500	2-9/16	2-3/8	.375	5-3/4	SBDFCLI11212PL
1-1/2	12	13,500	2-3/4	2-3/8	.440	5-3/4	SBHDFCLI11212PL

Specs based on a 4:1 Safety Factor in 3000 psi concrete (21 MPa)

CRISS CROSS DOUBLE FLARED COIL LOOP INSERTS

Primarily used for lifting precast sections



- Primarily used for lifting precast sections
- Comparable to the double flared coil loop insert above
- More compact allowing for use in tighter situations
- Available in bolt diameters of 1, 1-1/4 and 1-1/2 inches
- Minimum edge distance is 15 inches
- SWL based on 1/2" setback from face of concrete

CRISS CROSS DOUBLE FLARED COIL LOOP INSERTS							
BOLT DIAMETER	INSERT LENGTH (A)	S.W.L. TENSION	COIL DIAMETER (E)	COIL LENGTH (B)	WIRE DIAMETER (F)	LOOP DIAMETER (D)	PART NUMBER
in.	in.	lb	in.	in.	in.	in.	#
1	12-3/8	9,500	2-1/16	2-1/16	.375	5-1/2	SBCCDFCLI1PL
1	12-1/2	13,500	2-1/4	2-1/16	.440	5-3/4	SBHCCDFCLI1PL
1-1/4	12-3/8	9,500	2-5/16	2-1/16	.375	5-3/4	SBCCDFCLI114PL
1-1/4	12-1/2	13,500	2-1/2	2-1/16	.440	5-3/4	SBHCCDFCLI114PL
1-1/2	12-3/8	9,500	2-9/16	2-3/8	.375	5-3/4	SBCCDFCLI112PL
1-1/2	12-1/2	13,500	2-3/4	2-3/8	.440	5-3/4	SBHCCDFCLI112PL

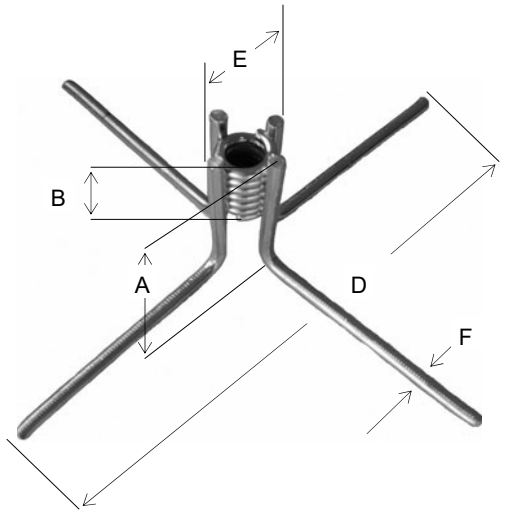
Specs based on a 4:1 Safety Factor in 3000 psi concrete (21 MPa)

MADE IN USA

See minimum coil bolt penetration, page 24.

"L" LEG COIL INSERTS

- Composed of a four strut insert
- Available in bolt diameters of 3/4 to 1-1/2 inches
- Struts fabricated from medium carbon steel wire
- Helix coils are electrically welded to the struts resulting in a consistently safe weld
- SWL based on 1/2" setback from face of concrete

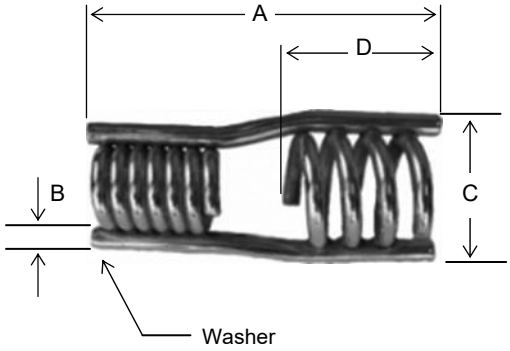


"L" LEG COIL INSERTS								
BOLT DIAMETER	INSERT HEIGHT (A)	S.W.L. TENSION	COIL WIRE (E)	COIL LENGTH (B)	WIRE DIAMETER (F)	LEG LENGTH (D)	MINIMUM EDGE DISTANCE	PART NUMBER
in.	in.	lb	in.	in.	in.	in.	in.	#
3/4	3	2,500	1-5/8	1-3/4	.306	7-1/8	9	SB34LLICPL
1	4	3,500	1-7/8	2-1/16	.306	9-1/2	12	SB1LLICPL
1-1/4	4	4,000	2-1/4	2-1/16	.375	9-3/4	12	SB114LLICPL
1-1/2	4	4,000	2-1/2	2-1/16	.375	10	12	SB112LLICPL

Specs based on a 4:1 Safety Factor in 3000 psi concrete (21 MPa)

OPEN COIL INSERTS

- Designed to give additional load strength in concrete without increasing the depth of the anchor
- Available in plain steel or electro-galvanized
- Available with 2, 4 or 6 struts
- Accompanying washers are available
- SWL based on 1/2" setback from face of concrete



OPEN COIL INSERTS									
BOLT DIAMETER	INSERT LENGTH (A)	SAFE WORK LOAD		STRUTS	WIRE DIAMETER (B)	C	D	MINIMUM EDGE DISTANCE	PART NUMBER
		TENSION	SHEAR						
in.	in.	lb	lb	#	in.	in.	in.	in.	#
3/4	4-1/2	4,250	4,250	2	.375	2-1/8	1-1/2	6	SB34412OCIPL
1	5-1/2	6,250	6,250	2	.440	2-1/2	2-1/4	7	SB1512OCIPL
1	7-1/2	10,000	12,000	4	.440	2-3/4	2-3/4	10	SB1712OCIPL
1-1/4	7-1/2	12,000	12,000	4	.440	3	2-3/4	10	SB114712OCIPL
1-1/4	9-1/2	16,000	16,000	6	.440	3	3-5/8	12	SB114912OCIPL
1-1/2	9-1/2	16,000	16,000	6	.440	3-3/8	3-5/8	12	SB1112912OCIPL

Specs based on a 4:1 Safety Factor in 3000 psi concrete (21 MPa)

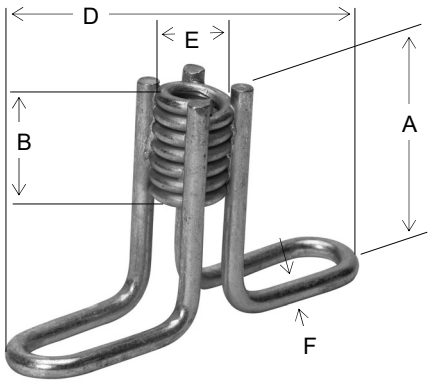
WARNING: Two-strut inserts are not recommended for lifting .

MADE IN USA

All specifications are subject to changes.

THIN SLAB COIL INSERTS

- Designed for use in small sections or thin slabs where larger inserts will not fit
- Used for small loads only
- Fixing plate available
- SWL based on 1/2” setback from face of concrete
- SUREBUILT does not recommend the use of 1/2” diameter bolts for lifting

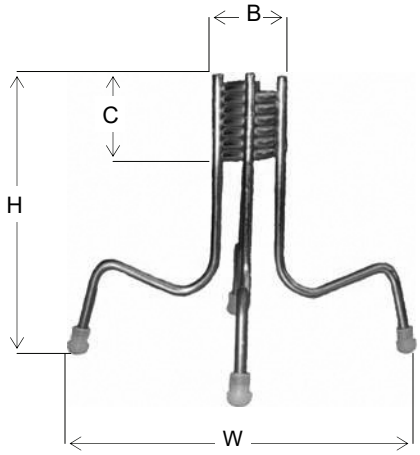


THIN SLAB COIL INSERTS								
BOLT DIAMETER	INSERT HEIGHT (A)	SAFE WORK LOAD (TENSION)	COIL DIAMETER (E)	COIL LENGTH (B)	WIRE DIAMETER (F)	INSERT LENGTH (D)	MINIMUM EDGE DISTANCE	PART NUMBER
in.	in.	lb	in.	in.	in.	in.	in.	#
1/2	2-1/4	950	1-1/4	1-1/8	.225	4-1/8	4	SBTSIC12PL
3/4	2-1/4	2,000	1-5/8	1-5/8	.306	5	5	SBTSIC342516PL
3/4	3-1/2	3,400	2	2	.306	6	6	SBTSIC34312PL
1	2-1/2	2,000	2	2	.306	6	5	SBTSIC12516PL
1	4-1/2	4,750	2	2	.306	6	8	SBTSIC1412PL

Specs based on a 4:1 Safety Factor in 3000 psi concrete (21 MPa)

SINGLE COIL PICK-UP INSERTS

- Used in precast panels as a face lift insert for stripping and handling in the yards
- Can also be used in utility boxes and other precast sections
- Minimum edge distance for all inserts is 15”
- Insert height is 3/8” less than the slab thickness
- Made with 0.375 in diameter wire



SINGLE PICK-UP INSERTS						
BOLT DIAMETER	SLAB OR PANEL THICKNESS AND SAFE WORK LOAD (TENSION)					
	4 in.	5 in.	5-1/2 in.	6 in.	7 in.	8 in.
in.	lb	lb	lb	lb	lb	lb
3/4	2,000	2,800	3,350	4,000	-	-
1	2,500	3,200	3,750	4,500	5,700	6,500
1-1/4	2,500	3,500	4,200	5,200	6,000	6,800
1-1/2	2,500	3,500	4,800	5,600	6,300	7,000

Specs based on a 4:1 Safety Factor in 3000 psi concrete (21 MPa)

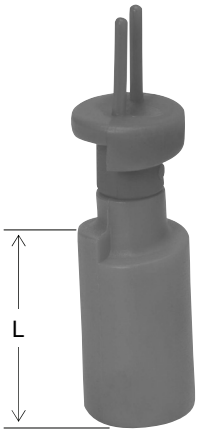
MADE IN USA

See minimum coil bolt penetration, page 24.

COIL INSERT LOCATOR PLUGS

- Provides a bolt hole in the concrete for later insertion of the lifting bolt
- Permits enough length below the coil to meet the minimum bolt penetration requirements
- Made of high viewable red plastic
- Can be ordered as a separate item or factory installed in an insert order

Instructions:
A two piece plug snaps into a coil in the middle. Remove upper cap with the tapered tail from the coil insert with screwdriver. Bottom portion remains and bolt will penetrate into the void created by the bottom plug.



COIL INSERT LOCATOR PLUGS		
INSERT SIZE / BOLT DIAMETER	LENGTH OF VOID BELOW BOTTOM OF COIL (L)	PART NUMBER
in.	in.	#
3/4	1-1/2	SBUIP34
1	1-5/8	SBUIP1
1-1/4	1-3/4	SBUIP114

COIL THREADED PLUGS

Coil plugs can be used with coil inserts and anchors to keep the threads clean during pours.

COIL THREADED PLUGS			
DIAMETER (MM)	PART #	PCS/CTN	WEIGHT/ 100
3/8" (10)	SBTPPC38	100	0.5
1/2" (13)	SBTPPC12	100	0.6
5/8" (16)	SBTPPC58	100	0.8
3/4" (19)	SBTPPC34	100	1

COIL SETTING PLUGS

These plugs are used to secure inserts to forms. The nail hole through the center of the plug provides quick, easy fastening to forms. They are available for use with 1/2”, 3/4” and 1” threaded inserts.

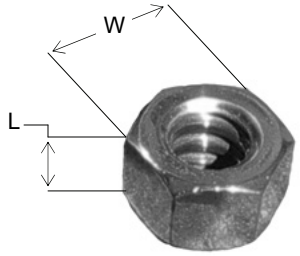
COIL SETTING PLUGS		
SIZE	PART #	PCS/CTN
1/2" x 2 1/2”	SBPSP12	1400
3/4" x 3 3/4”	SBPSP34	300
1" x 5”	SBPSP1	250

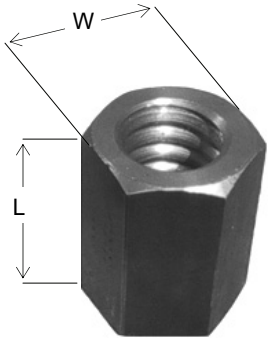
STEEL COIL SETTING PLUGS WITH MAGNET		
SIZE	WEIGHT EACH	PART NUMBER
in. x in.	lb	#
1/2 x 6	0.82	SBGB100126CR
3/4 X 6	1.12	SBGB100346CR
1 X 6	1.62	SBGB10016CR
1-1/4 X 6	2.23	SBGB1001146CR

All specifications are subject to changes.

HEX COIL NUTS

- Available in standard or heavy
- All made from standard hex stock
- Available in all diameters.
- The heavy coil nut twice the length of a standard coil nut





HEX COIL NUTS						
INSERT TYPE	BOLT SIZE	SAFE WORK LOAD (TENSION)		NUT LENGTH (L)	WIDTH ACROSS FLATS (W)	PART NUMBER
		ONE STANDARD	TWO STANDARD - ONE HEAVY			
	in.	lb	lb	in.	in.	#
Standard	1/2	1,800	3,600	1/2	7/8	SB12CN
	3/4	3,600	7,200	5/8	1-1/8	SB34CN
	1	7,200	15,000	1	1-5/8	SB1CN
	1-1/4	10,800	22,500	1-1/4	2	SB114CN
	1-1/2	16,200	27,000	1-1/2	2-3/8	SB112CN
Heavy	1/2	-	3,600	1	7/8	SBHHCN12
	3/4	-	7,200	1-1/2	1-1/8	SBHHCN34
	1	-	15,000	2	1-5/8	SBHHCN1
	1-1/4	-	22,500	2-1/2	2	SBHHCN114

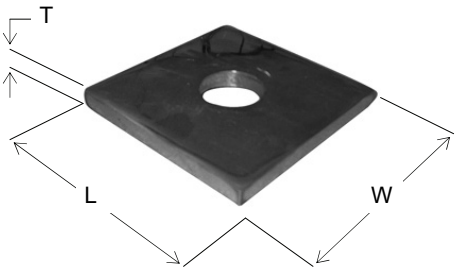
Specs based on a 5:1 Safety Factor

FLAT WASHERS

- Available in standard or heavy
- All made from standard hex stock

Flat washers are used with all sizes of coil bolts and coil rod. The washers are fabricated from carbon steel and are designed to give adequate bearing against wales or joints.

Caution: Load values of washers are based on the double wales being spaced no further apart than the bolt diameter plus 1/4”



FLAT WASHERS						
TYPE	BOLT SIZE	SWL	T	L	E	PART NUMBER
	in.	lb	in.	in.	in.	#
Standard	1/2	1,800	1/4	4	3	SBFW1434916
	3/4	2,700	1/4	4	5	SBFW14451316
	1	7,200	1/2	5	5	SBFW12551116
	1-1/4	10,800	1/2	5	5	SBFW12551516
	1-1/2	15,000	3/4	5	5	SBFW34551916
Heavy	1/2	2,700	1/4	4	5	SBFW1445916
	3/4	3,600	1/2	5	5	SBFW12551316
	1	15,000	3/4	7	7	SBFW34771116
	1-1/4	15,000	3/4	7	7	SBFW34771516
	1-1/2	15,000	3/4	7	7	SBFW34771916

Specs based on a 5:1 Safety Factor

MADE IN USA

See minimum coil bolt penetration, page 24.

HIGH TENSILE COIL RODS

- Continuously threaded coil rod
- Available in 1/2”, 5/8”, 3/4”, 1”, 1-1/4” and 1-1/2” diameters
- 12’ length is standard. Custom lengths available. Cutting charge may be applied

Although coil rod has numerous uses, it is most commonly used:

- in conjunction with short coil ties for extremely wide or variable sized walls
- as an anchor
- as external tying of corner forms or column forms

Mild steel coil rod is available in any length up to 10 feet. High tensile is available in any length up to 12 feet. With proper lead times both mild and high tensile can be furnished up to 20 feet.

HIGH TENSILE COIL RODS

BOLT SIZE	SAFE WORK LOAD		PART NUMBER
	TENSION	SHEAR	
in.	lb	lb	#
1/2	3,600	2,400	SB1212CR
5/8	7,200	4,800	SB5812CR
3/4	9,200	6,800	SB3412CR
1	15,000	10,000	SB112CR
1-1/4	24,000	16,000	SB11412CR
1-1/2	28,000	18,000	SB11212CR

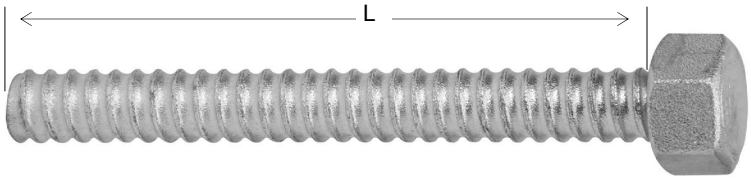
Specs based on a 5:1 Safety Factor

COIL BOLTS

Coil bolts are designed with fast-threading, self-cleaning threads. The threads are contoured to mate with the helix coil of SureBuilt’s coil ties and coil loops and has a hex nut head for easy tightening.

Although coil bolts are very durable by design it is important that they be inspected for bending, cracks, worn threads or reductions of shank diameter due to overloading or misuse. Such bolts must be discarded.

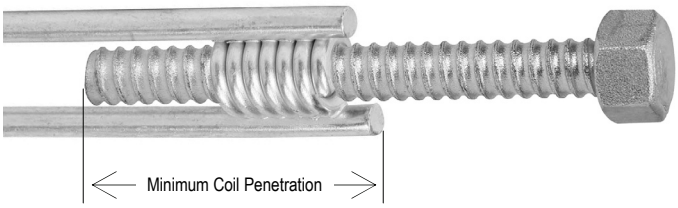
Coil bolts are never to be tightened using an impact wrench.



COIL BOLTS

3/4 IN. (13 MM.) DIA. SAFE WORK LOAD		1 IN. (25 MM.) DIA. SAFE WORK LOAD		1-1/4 IN. (32 MM.) DIA. SAFE WORK LOAD		1-1/2 IN. (38 MM.) DIA. SAFE WORK LOAD	
TENSION	SHEAR	TENSION	SHEAR	TENSION	SHEAR	TENSION	SHEAR
lb	lb	lb	lb	lb	lb	lb	lb
7,200	4,800	15,000	10,000	24,000	16,000	28,000	18,000
MINIMUM COIL PENETRATION		MINIMUM COIL PENETRATION		MINIMUM COIL PENETRATION		MINIMUM COIL PENETRATION	
in.		in.		in.		in.	
2-1/4		2-1/2		3		3	

Specs based on a 5:1 Safety Factor

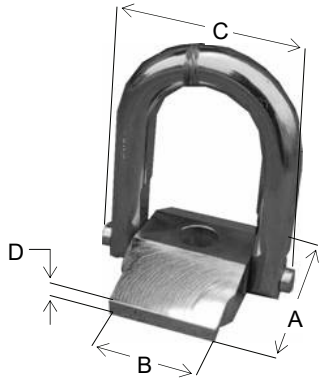


MADE IN USA

All specifications are subject to changes.

SWIVEL LIFT PLATE

- Designed for attaching to any type of single lift insert
- Available in 3/4” and 1” coil bolt sizes

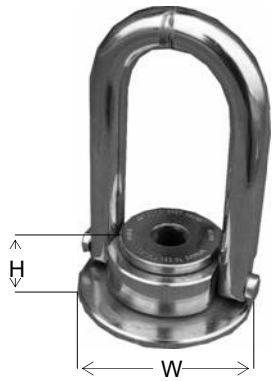


SWIVEL LIFT PLATE							
BOLT DIAMETER	SWL TENSION	A	B	C	D	MINIMUM BOLT LENGTH	PART NUMBER
in.	lb	in.	in.	in.	in.	in.	#
3/4	7,000	5	2-5/8	5-1/8	5/8	4	SBUSLP34
1	10,000	5	2-5/8	5-1/8	5/8	5	SBUSLP1

Based on 5:1 Safety Factor

DOUBLE SWIVEL LIFT PLATE

- Will permit rotation of the bail in the direction of the applied loading
- Bail portion of the lift plate rotates a full 360° in horizontal plane and will also swivel 180° in a vertical plane



DOUBLE SWIVEL LIFT PLATE					
BOLT DIAMETER	SWL TENSION	H	W	MINIMUM BOLT LENGTH	PART NUMBER
in.	lb	in.	in.	in.	#
3/4	7,000	1-1/2	5	4-1/2	SBUDSLP34
1	10,000	2	5	5	SBUDSLP1
1-1/4	15,000	2-3/4	7	6	SBUDSLP114
1-1/2	20,000	2-3/4	7	6	SBUDSLP112

Based on 5:1 Safety Factor
Note: Need to use minimum 150ksi type bolt.

LIFTING ANGLE

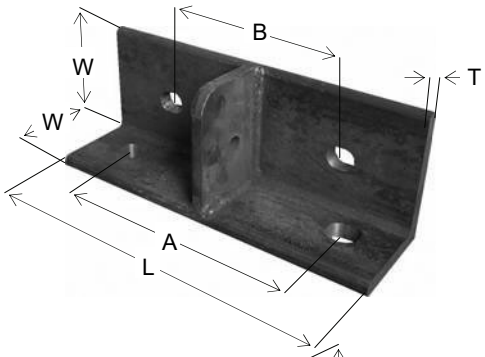
Although the lifting angle is generally used for face lifting tilt-up panels, it can also be used on edge lift conditions where the panel thickness is 6” or greater. Cut washers are required under the head of each bolt.

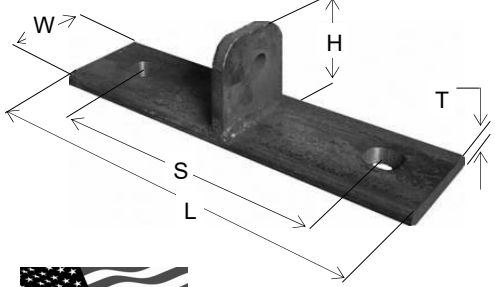
LIFTING ANGLE							
BOLT DIAMETER	SWL TENSION	MINIMUM BOLT LENGTH	A	B	T	L	W
in.	lb	in.	in.	in.	in.	in.	in.
1	12,000	4	12	-	3/4	21	6
1-1/4	18,000	4	-	15	3/4	21	6
1-1/2	18,000	4	-	15	3/4	21	6

Based on 5:1 Safety Factor

EDGE LIFTING PLATE

The edge lifting plate is specifically designed to be used with either the double edge pickup insert or the double end pick-up insert. Minimum coil bolt length to be used is 4”. Cut washers are required under the head of each bolt.





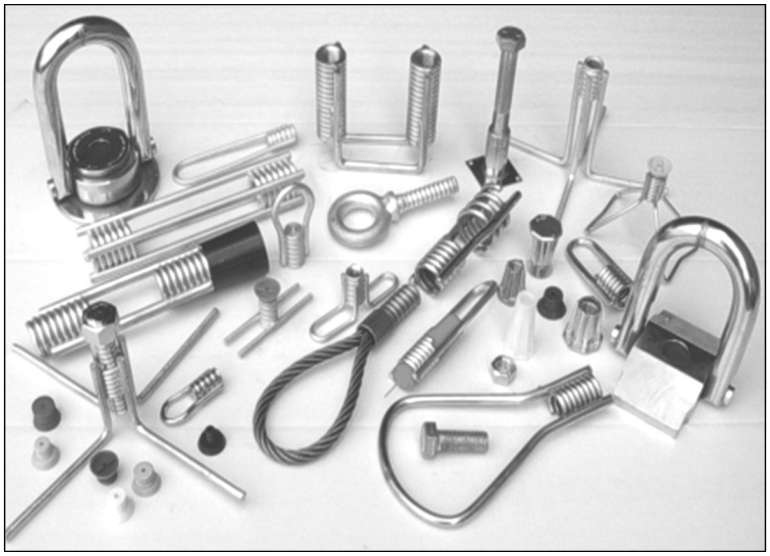
EDGE LIFTING PLATE						
BOLT DIAMETER	SWL TENSION	T	W	L	H	S
in.	lb	in.	in.	in.	in.	in.
3/4	8,800	1	4	18	5-1/2	12
1	8,800	1	4	18	5-1/2	12

Based on 5:1 Safety Factor

MADE IN USA

See minimum coil bolt penetration, page 24.

Ferrule Inserts

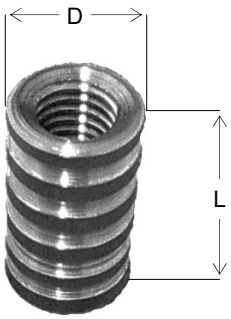


PRODUCT INDEX

STANDARD FERRULE INSERTS

The Standard Ferrule is made from solid bar stock 12L14 cold drawn steel and is available in all bolt diameters shown in table. Special length ferrules are available upon request. All ferrules made by SureBuilt Manufacturing have Unified National Course standard thread (NC thread). Back end of ferrules are closed to prevent concrete from entering. Minimum bolt engagement for ferrule insert is bolt diameter plus 1/8 inch (3 mm) and maximum bolt engagement is shown in table below.

Ferrules may be substituted in any standard coil product desired. There is no capacity reduction of an insert when this substitution is made. Ferrules and coils (of same diameter) will have the same load carrying capacities.



STANDARD FERRULE INSERTS					
BOLT DIAMETER	THREADS/IN.	MAXIMUM BOLT ENGAGEMENT	LENGTH (L)	DIAMETER (D)	PART NUMBER
in.	pitch	in.	in.	in.	#
3/8	16	3/4	1-1/4	9/16	SBFI38PL
1/2	13	1	1-3/8	11/16	SBFI12PL
5/8	11	1-1/8	1-5/8	7/8	SBFI58PL
3/4	10	1-1/8	1-5/8	1	SBFI34PL
7/8	9	1-1/8	1-5/8	1-3/8	SBFI78PL
1	8	1-1/8	1-5/8	1-3/8	SBFI1PL

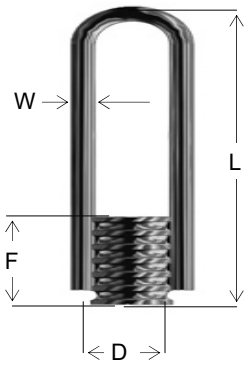
No SWL specified for individual ferrules.
Note: Ferrules with an open back end may be ordered. On special ferrules, which are longer than standard, it may be necessary to leave back end open due to machining requirements.

STRAIGHT LOOP FERRULE INSERTS

The various types of ferrule inserts are designed to be used either as a permanent attachment of a precast panel to a building frame or as a mechanical connection of such items as pipes, sprinkler systems or other suspended items. Ferrules accept NC threaded bolts or all NC thread rod. Bolt lengths are critical because the ferrules are closed at the bottom end.

Ferrules are available in 1/4”, 3/8”, 1/2”, 5/8”, 3/4”, and 1” nominal bolt sizes.

- Safety factor is approximately 3:1.
- Not for use as a lifting insert.



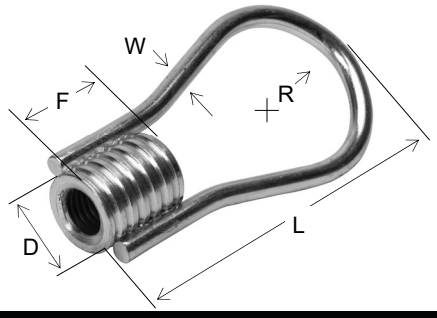
STRAIGHT LOOP FERRULE INSERTS							
BOLT DIAMETER	INSERT LENGTH (L)	SAFE WORK LOAD TENSION	D	F	W	MINIMUM EDGE DISTANCE	PART NUMBER
in.	in.	lb	in.	in.	in.	in.	#
1/2	4-1/8	3,000	11/16	1-3/8	.225	5	SBSFLI124PL
1/2	6-1/8	4,000	11/16	1-3/8	.306	8	SBSFLI126PL
5/8	4-1/8	3,000	7/8	1-5/8	.225	5	SBSFLI584PL
5/8	6-1/8	5,000	7/8	1-5/8	.375	8	SBSFLI586PL
3/4	4-1/8	3,000	1	1-5/8	.225	5	SBSFLI344PL
3/4	6-1/8	5,000	1	1-5/8	.375	9	SBSFLI346PL
7/8	6-1/8	5,000	1-3/8	1-5/8	.375	9	SBSFLI786PL
1	6-1/8	5,000	1-3/8	1-5/8	.375	9	SBSFLI16PL
1	8-1/8	6,000	1-3/8	1-5/8	.375	9	SBSFLI18PL

SWL based on 1/2” (13 mm) set-back from concrete surface. Minimum concrete compressive strength, f’c = 3000 psi (21 MPa).

MADE IN USA

FERRULE LOOP INSERTS

- Used as a connection insert for securing panels and suspension anchors for sprinklers, water pipes and many other types of plumbing fixtures that must be attached to the concrete.
- Safety factor is approximately 3:1
- Not for use as a lifting insert

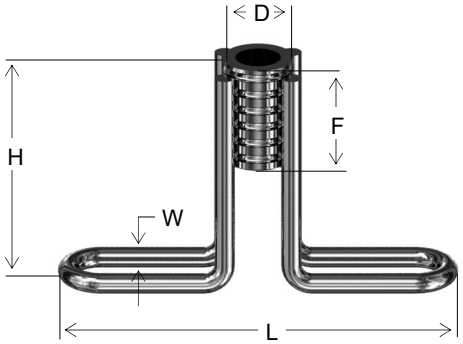


LOOP FERRULE INSERTS								
BOLT DIAMETER	SAFE WORK LOAD (TENSION)	L	F	D	R	WIRE DIAMETER W	MINIMUM EDGE DISTANCE	PART NUMBER
in.	lb	in.	in.	in.	in.	in.	in.	#
3/8	2,000	2-3/4	1-1/4	9/16	9/16	.243	5	SBLFI38PL
1/2	2,000	2-3/4	1-3/8	11/16	9/16	.243	5	SBLFI12PL
5/8	2,300	3-1/2	1-5/8	7/8	13/16	.262	5	SBLFI58PL
3/4	2,400	3-1/2	1-5/8	1	13/16	.262	5	SBLFI34PL
7/8	5,300	6	1-5/8	1-1/4	1-3/8	.375	8	SBLFI78PL
1	5,300	6	1-5/8	1-3/8	1-3/8	.375	8	SBLFI1PL

SWL based on 1/2" (13mm) set-back from concrete surface.
Minimum concrete compressive strength, f'c = 3000 psi (21 MPa).

FERRULE WING INSERTS

- For use where concrete thickness is limited and other inserts will not fit.
- Provides more capacity than the economical insert and is basically the same overall size.
- Safety factor is approximately 3:1.
- Not for use as a lifting insert.



FERRULE WING INSERTS								
BOLT DIAMETER	INSERT HEIGHT (H)	SWL TENSION	LENGTH (L)	DIAMETER (D)	FERRULE (F)	WIRE DIAMETER (W)	MINIMUM EDGE DISTANCE	PART NUMBER
in.	in.	lb	in.	in.	in.	in.	in.	#
1/2	1-3/4	1,200	4-1/2	11/16	1-3/8	.225	5	SBTSFFI12134
5/8	2-7/16	2,500	4-3/4	7/8	1-5/8	.306	6	SBTSFFI582716
3/4	2-7/16	2,650	4-7/8	1	1-5/8	.306	6	SBTSFFI34276
3/4	3-5/8	4,500	4-7/8	1-3/8	1-5/8	.306	8	SBTSFFI34358
1	2-7/16	4,500	5-1/8	1-3/8	1-5/8	.375	6	SBTSFFI12716
1	4-5/8	6,500	5-1/8	1-3/8	1-5/8	.375	9	SBTSFFI1458

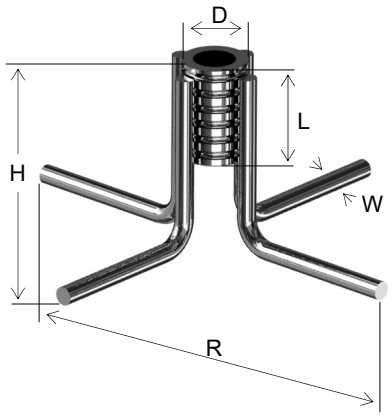
SWL based on 1/2" (13 mm) set-back from concrete surface.
Minimum concrete compressive strength, f'c = 3000 psi (21 MPa).

MADE IN USA

All specifications are subject to changes.

"L" LEG FERRULE INSERTS (4 STRUT)

- Connection type insert useful in suspending or hanging various plumbing pipes or securing a panel to a building frame.
- If used as a lifting insert for small precast elements, SWL must be adjusted from 3:1 safety factor to 4:1 safety factor by user.
- SWL based on 1/2" set-back from concrete surface
- Minimum concrete compressive strength, f'c = 3000 psi (21 MPa)
- Safety factor is approximately 3:1

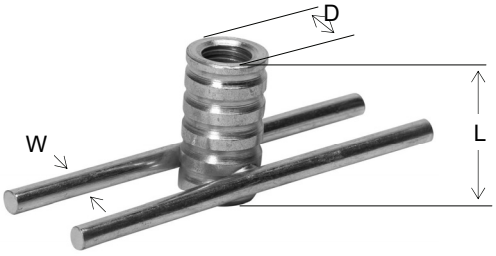


Note: When used as a lifting insert, user must reduce SWL for a 4:1 safety factor

"L" LEG FERRULE INSERTS								
BOLT DIAMETER	INSERT HEIGHT (H)	SWL TENSION	DIAMETER (D)	LENGTH (L)	LEG LENGTH (R)	WIRE DIAMETER (W)	MINIMUM EDGE DISTANCE	PART NUMBER
in.	in.	lb	in.	in.	in.	in.	in.	#
3/4	3-1/8	3,500	1	1-5/8	7	.306	7	SB34LLIFPL
1	4-1/8	4,500	1-3/8	1-5/8	9-1/2	.306	9	SB1LLIFPL

THIN SLAB FERRULE INSERTS (2 STRUT PARALLEL)

- Designed for use where concrete thickness is thin and other inserts will not fit.
- Horizontally welded wire 4 inch (100 mm) struts welded to first or second groove from bottom of ferrule.
- In some SureBuilt Manufacturing facilities may be supplied with a 4 inch (100 mm) straight wire loop.
- Not for use as a lifting insert.
- Safety factor is approximately 3:1.



Caution: Low and limited capacity and under no circumstances should the user exceed the Safe Work Load shown below in table.

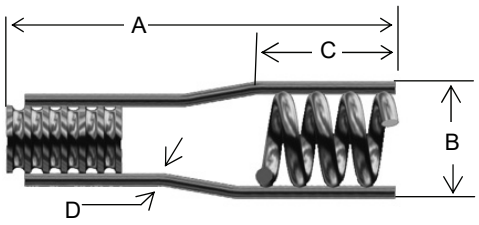
2 STRUT PARALLEL THIN SLAB FERRULE INSERTS					
BOLT DIAMETER	SAFE WORK LOAD TENSION	LENGTH (L)	DIAMETER (D)	WIRE DIAMETER (W)	PART NUMBER
in.	lb	in.	in.	in.	#
3/8	450	1-1/4	9/16	.261	SBTSFI38PL
1/2	900	1-3/8	11/16	.261	SBTSFI12PL
5/8	1,000	1-5/8	7/8	.261	SBTSFI58PL
3/4	1,600	1-5/8	1	.261	SBTSFI34PL
7/8	1,600	1-5/8	1-3/8	.261	SBTSFI78PL
1	1,600	1-5/8	1-3/8	.261	SBTSFI1PL

SWL based on 1/2" (13 mm) set-back from concrete surface.
Minimum concrete compressive strength, f'c = 3000 psi (21 MPa).

MADE IN USA

OPEN COIL INSERTS WITH FERRULE

- Designed to develop higher load capacities without increasing depth of insert
- Adequate vibration is necessary to assure concrete surrounds the open coil
- Specs based on a 4:1 Safety Factor for lifting
- SWL based on 1/2" set-back from concrete surface

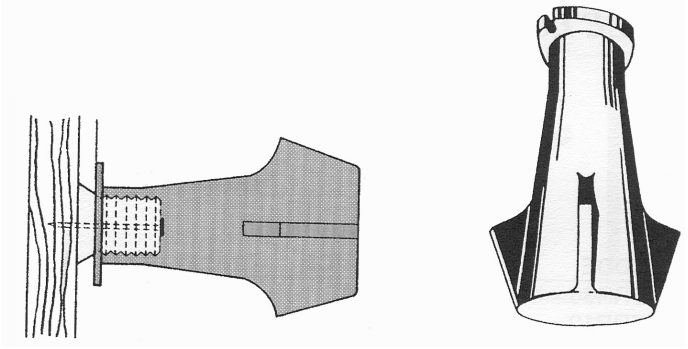


OPEN COIL INSERTS WITH FERRULE									
BOLT DIAMETER	INSERT LENGTH (A)	SAFE WORK LOAD		STRUTS	WIRE DIAMETER (D)	B	C	MINIMUM EDGE DISTANCE	PART NUMBER
		TENSION	SHEAR						
in.	in.	lb	lb	#	in.	in.	in.	in.	
3/4-NC	4-5/8	4,250	4,250	2	.375	2-1/8	1-1/2	6	**SB34458OCIFPL**
7/8-NC	6-1/8	5,000	5,000	2	.375	2-1/2	2-1/4	7	**SB78618OCIFPL**
1-NC	5-5/8	6,250	6,250	2	.440	2-1/2	2-1/4	7	**SB1558OCIFPL**
1-NC	7-5/8	10,000	12,000	4	.440	2-3/4	2-3/4	10	**SB1758OCIFPL**
1-1/4-NC	7-5/8	12,000	12,000	4	.440	3	2-3/4	10	**SB114758OCIFPL**
1-1/4-NC	9-5/8	16,000	16,250	6	.440	3	3-5/8	12	**SB114958OCIFPL**
1-1/2-NC	9--5/8	16,000	16,250	6	.440	3-3/8	3-5/8	12	**SB112958OCIFPL**

Specs based on a 4:1 Safety Factor in 3000 psi concrete

HIGH TENSILE DUCTILE FERRULE INSERTS

- Designed to give additional load strength in concrete
- Cast in place insert, which provides internal, NC threads in the concrete
- Used with plastic threaded setting plug can be attached to the inside of the form for easy embedment
- Tension load based on 2000 psi concrete
- Based on a 3:1 Safety Factor for lifting
- This product requires proper engineering



DUCTILE FERRULE INSERTS					
BOLT DIAMETER (B)	INSERT LENGTH (A)	WEIGHT /100	SAFE WORK LOAD (3:1)		PART NUMBER
			TENSION	SHEAR	
in.	in.	lb	lb	lb	#
3/8	1-15/16	25.0	900	1,000	**SBINS038**
1/2	2-1/4	31.3	1,500	1,680	**SBINS012**
5/8	2-7/8	50.0	2,100	2,700	**SBINS058**
3/4	3-1/4	56.3	2,980	4,025	**SBINS034**
7/8	4-1/8	87.5	3,950	5,000	**SBINS078**
1	4-1/8	100.0	4,800	6,000	**SBINS100**

Minimum edge distance equal to twice the anchor length.
Insert shear values are based on the ultimate shear capacity of standard A307 bolts.

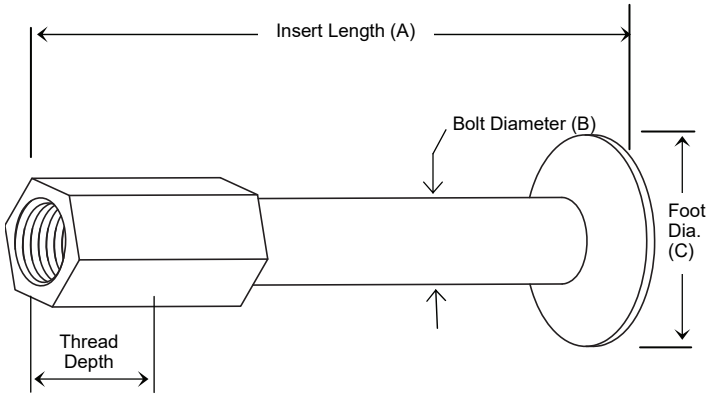
MADE IN USA

All specifications are subject to changes.

DUCTILE INSERTS

- Designed to give additional load strength in concrete
- Anchors can be used for lifting/handling or fixing and mounting for structural purpose
- Ductile Insert components like couplers, bolts or nuts can be supplied in round or hex version
- Use with SureBuilt double lifting plate for maximum capacity
- Available in coil or NC threaded, hex foot or forged foot

The large foot creates a large shear cone in concrete.

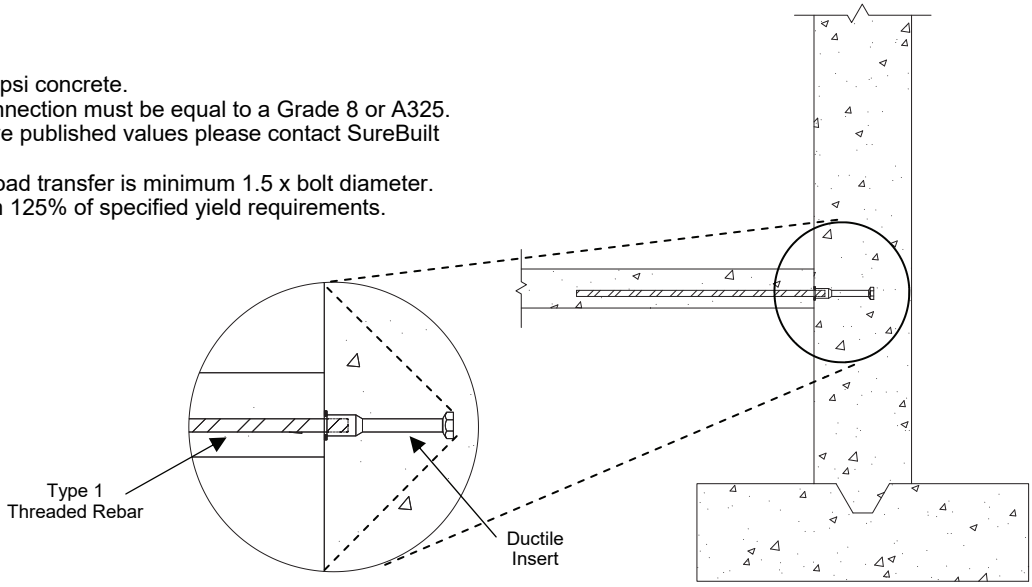


DUCTILE INSERTS						
BOLT DIAMETER (B)	INSERT LENGTH (A)	MIN. ULTIMATE STRENGTH IN 3500 PSI CONCRETE	MIN. FOOT DIA. (C)	THREAD DEPTH	MINIMUM EDGE DISTANCE	PART NUMBER
in.	in.	lb	in.	in.	in.	#
1/2 NC	5.00	18,000	1	7/8	8	**SBDFI125**
5/8 NC	6.00	24,000	1-1/4	1	10	**SBDFI586**
3/4 NC	7.00	34,600	1-1/2	1-1/4	12	**SBDFI347**
7/8 NC	7.50	43,000	1-3/4	1-3/8	15	**SBDFI78712**
1 NC	8.00	59,000	2	1-1/2	16	**SBDFI18**
1-1/8	10.00	75,500	2-1/4	1-3/4	20	**SBDFI11810**
1-1/4	12.00	96,000	2-1/2	2	24	**SBDFI11412**

Ultimate strength need to be divided by safety factors:

- 2:1 for temporary fixture
- 3:1 for permanent fixing
- 4:1 for lifting

Ultimate strength based on 3,500 psi concrete.
For connecting, the bolt or rod connection must be equal to a Grade 8 or A325.
If edge distance is below the above published values please contact SureBuilt engineer.
Minimum bolt penetration for full load transfer is minimum 1.5 x bolt diameter.
Rebar connection meets minimum 125% of specified yield requirements.
Standard TSP nail plug available.



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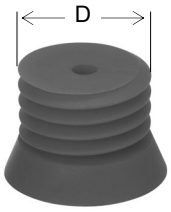
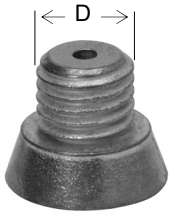


NC THREADED PLUGS PLASTIC & ZINC

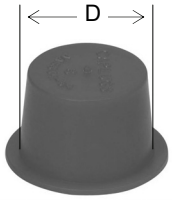
The threaded plug is used similarly to the plastic cap except it has threads and can be threaded into and out of a ferrule insert previously cast into concrete to keep bolt holes clean.

It is also excellent for installing a ferrule insert on form. A nail hole is provided in center of the plug for ease of attachment.



NC THREADED PLUGS				
DIAMETER (D)	WEIGHT PLASTIC	PART NUMBER PLASTIC	WEIGHT ZINC STEEL	PART NUMBER ZINC STEEL
in.	lb/100	#	lb/100	#
1/4 NC	0.4	SBTPP14	0.86	SBTSP14
3/8 NC	0.5	SBTPP38	1.58	SBTSP38
1/2 NC	0.6	SBTPP12	3.80	SBTSP12
5/8 NC	0.8	SBTPP58	7.80	SBTSP58
3/4 NC	1.0	SBTPP34	10.40	SBTSP34

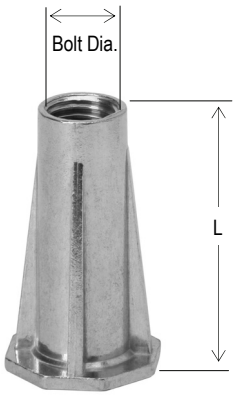
PUSH-IN PLASTIC PLUGS



The plastic cap is designed to be inserted in the open end of a ferrule to keep concrete and debris out of the ferrule before use.

It may also be used to attach the ferrule insert to the inside of a form by pre-nailing the plug to the form.

PUSH-IN PLASTIC PLUGS		
DIAMETER (D)	WEIGHT	PART NUMBER
in.	lb/100	#
3/8	0.2	SBPPPC38
1/2	0.2	SBPPPC12
5/8	0.3	SBPPPC58
3/4	0.4	SBPPPC34
1	0.8	SBPPPC1

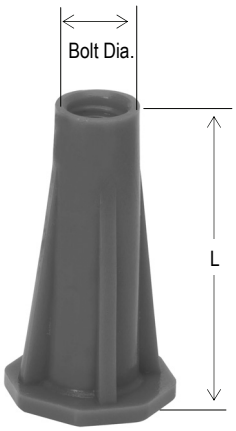


NC PRECAST CONCRETE INSERTS

- Threaded precast insert
- Made from a zinc alloy insert corrosion resistant steel
- Specially designed foot creates a large shear cone in relatively thin concrete panels or walls.
- Available in most bolt sizes

NC PRECAST STEEL INSERTS					
BOLT DIA.	LENGTH (L)	THREADS / in.	SWL TENSION	WEIGHT	PART NUMBER
in.	in.	pitch	lb	lb/100	#
1/4	1-1/2	20	750	4.72	SBPCI14112
3/8	1	16	1,200	4.28	SBPCI381
3/8	1-3/8	16	1,400	6.84	SBPCI38138
1/2	1-1/2	13	1,500	14.72	SBPCI12112
1/2	2-7/8	13	3,000	29.90	SBPCI12278
5/8	1-11/16	11	1,750	20.96	SBPCI581116
5/8	2-7/8	11	3,000	35.80	SBPCI58278
3/4	1-11/16	10	2,000	31.60	SBPCI3411116
3/4	2-7/8	10	3,500	47.60	SBPCI34278

*3:1 safety factor
Minimum concrete compression strength 3000 psi.



NC PLASTIC INSERTS

- Cost effective
- Threaded insert
- Specially designed foot creates a large shear cone in relatively thin concrete panels or walls.
- Available in most bolt sizes

NC PRECAST PLASTIC INSERTS					
BOLT DIA.	LENGTH (L)	SWL TENSION	PCS/CTN	WEIGHT	PART NUMBER
in.	in.	lb	#	lb/100	#
3/8	1	1,200	2,000	0.5	SBPCIP38
1/2	2-1/2	2,500	1,000	0.6	SBPCIP12
5/8	3	3,000	500	0.8	SBPCIP58
3/4	3	3,300	500	1.0	SBPCIP34

All specifications are subject to changes.

NOTES:

RING LIFT SYSTEM

THE SUREBUILT RING LIFT SYSTEM
Includes:

- Hardware Lifting Unit
  Available in 2T-10T capacities
- Anchors, Inserts or Erection Anchors with Formers
- Bolt and Wing Nut Assemblies
- Reinforcement Accessories

PRODUCT INDEX

All specifications are subject to changes.

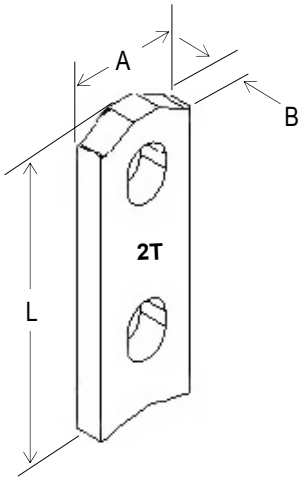
TWO-HOLE ANCHOR

- Used for stripping panels from tilt tables and tripping panels
- Also appropriate for high tension loads that cannot be held with other anchors or for panels constructed of lightweight concrete
- Safe working loads up to 10 tons, based on a 4:1 safety factor

CAUTION: *In the case of edge lifts involving any shear forces, use the better-suited Ring Lift Erection Anchor found on page 40 in this booklet.*

For Thin Slabs
The full safe working load can be achieved in a thin slab or when there is low concrete strength by using a tension bar in the second hole.

High Capacity
The wider distribution of shear forces allows for the raising of very thin-walled panels and concrete units that must be handled at low compressive strength.



To order choose from table:

TWO-HOLE ANCHOR							
ANCHOR TONNAGE	CLUTCH ID	LENGTH (L)	WIDTH (A)	THICKNESS (B)	SWL 4:1 SF TENSION	WEIGHT EACH	PART NUMBER
tons	#	in.	in.	in.	lb	lb	#
2T	2-2.5T	4	1-1/4	3/8	4,000	0.42	**SBTHA384G**
2.5T	2-2.5T	4	1-1/4	3/8	5,000	0.42	**SBTHA38425TG**
4T	4-5T	4	1-1/2	5/8	8,000	0.87	**SBTHA584G**
5T	4-5T	4	1-1/2	5/8	10,000	0.87	**SBTHA5845TG**
6T	8-10T	7	2-1/2	5/8	12,000	2.00	**SBTHA5876TG**
8T	8-10T	7	2-1/2	3/4	16,000	3.08	**SBTHA347G**
10T	8-10T	7	2-1/2	3/4	20,000	3.08	**SBTHA34710TG**

*Based on 4:1 Safety Factor

Minimum reinforcing length (L) needed to develop the full strength of the anchor.

ACCESSORIES
TENSION BAR

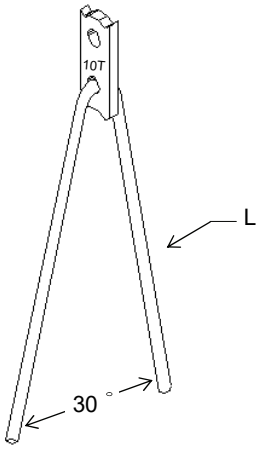
- Easy to use
- Cost efficient
- Distributes tension loads into the precast element
- Can be used with a variety of anchors

To order choose from table:

TENSION BAR				
PART NUMBER		SBTB2T	SBTB4T	SBTB8T
LOAD GROUP		2T-2.5T	4T-5T	6T-8T-10T
REBAR SIZE	in.	#4	#5	#6
CONCRETE STRENGTH		TOTAL TENSION BAR LENGTH (L)		
1,500 psi.		3'0"	4'0"	6'0"
2,000 psi.		2'9"	3'6"	5'6"
2,500 psi.		2'8"	3'0"	5'0"
3,000 psi.		2'6"	3'0"	4'6"
5,000 psi.		1'8"	2'2"	3'3"

*Based on 4:1 Safety Factor

Minimum reinforcing length (L) needed to develop the full strength of the anchor.



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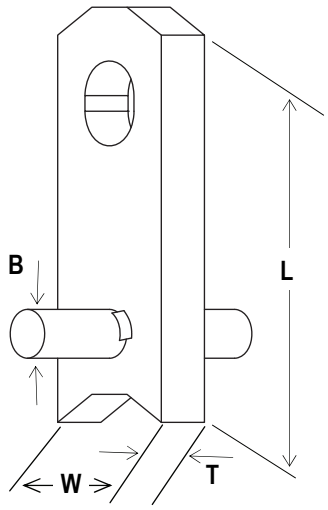
T-BAR ANCHOR

T-Bar Anchors can be placed on the face, back or edge of panels allowing for back-stripping and rotation from horizontal to vertical.



T-BAR ANCHOR							
ANCHOR TONNAGE	**PART NUMBER**	**LENGTH (L)**	**WIDTH (W)**	**THICKNESS (T)**	**BAR THICKNESS (B)**	MIN. PANEL THICKNESS	**SWL SHEAR & TENSION**
tons	**#**	**in.**	**in.**	**in.**	**in.**	**in.**	**lb**
2T	**SBTBA2T434**	4"	1-1/4"	3/8"	1/2"	4-3/4"	4,000
2T	**SBTBA2T578**	5-1/2"	1-1/4"	3/8"	1/2"	5-7/8"	4,000
4T	**SBTBA4T458**	4-1/4"	1-1/2"	5/8"	1/2"	4-5/8"	5,500
4T	**SBTBA4T518**	4-3/4"	1-1/2"	5/8"	1/2"	5-1/8"	7,100
4T	**SBTBA4T558**	5-1/4"	1-1/2"	5/8"	1/2"	5-5/8"	8,000
4T	**SBTBA4T618**	5-3/4"	1-1/2"	5/8"	1/2"	6-1/8"	8,000
4T	**SBTBA4T658**	6-1/4"	1-1/2"	5/8"	1/2"	6-5/8"	8,000
4T	**SBTBA4T718**	6-3/4"	1-1/2"	5/8"	1/2"	7-1/8"	8,000
4T	**SBTBA4T758**	7-1/4"	1-1/2"	5/8"	1/2"	7-5/8"	8,000
4T	**SBTBA4T818**	7-3/4"	1-1/2"	5/8"	1/2"	8-1/8"	8,000
8T	**SBTBA8T1112**	6-1/8"	2-1/2"	3/4"	3/4"	11-1/2"	8,900
8T	**SBTBA8T1134**	11-1/8"	2-1/2"	3/4"	3/4"	11-3/4"	16,000

Available in black, galvanized and HDG.

Minimum edge or opening distance 4x embedded depth.

For handling and rotating panels sufficient length of slings and cable is required, Sling angle inclination factors apply.

Safe Working Load provides a factor of safety of approximately 4 to 1 in 3,500 psi normal weight concrete.

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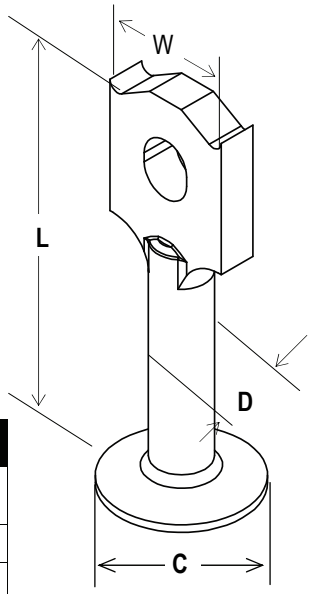
FOOT ANCHOR



High Capacity for Heavy Loads. The Foot Anchor handles most face lifting applications by developing a shear cone. The strong forged metal ensures structural integrity for consistently safe lifts.

For Thin Slabs
The full safe working load can be achieved in thin slab by using a tension bar or when there is low concrete strength.

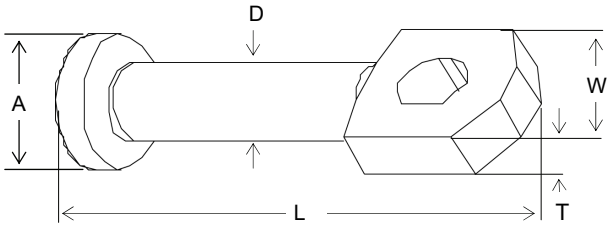
High Capacity for Heavy Loads
The device's foot develops a high tension shear cone in concrete slabs. It is available in many sizes and can handle most face lifting applications. The strong forged metal ensures structural integrity for consistently safe lifts.

DROP FORGED FOOT ANCHOR							
ANCHOR TONNAGE	CLUTCH ID	LENGTH (L)	WIDTH (W)	THICKNESS (D)	FOOT DIAMETER (C)	SWL TENSION	PART NUMBER
tons	#	in.	in.	in.	in.	lb	#
2.5T	2-2.5T	3-1/2	1-5/16	1/2	1-1/2	3,900	**SBRFA25312G**
2.5T	2-2.5T	4-1/2	1-5/16	1/2	1-1/2	4,400	**SBRFA25412G**
2.5T	2-2.5T	5-1/2	1-5/16	1/2	1-1/2	4,510	**SBRFA25512G**
2.5T	2-2.5T	6-1/2	1-5/16	1/2	1-1/2	5,000	**SBRFA25612G**
5T	4-5T	3-1/2	1-13/16	3/4	2-1/4	4,400	**SBRFA5312G**
5T	4-5T	4-1/2	1-13/16	3/4	2-1/4	6,200	**SBRFA5412G**
5T	4-5T	5-1/2	1-13/16	3/4	2-1/4	8,500	**SBRFA5512G**
5T	4-5T	7-1/2	1-13/16	3/4	2-1/4	9,000	**SBRFA5712G**
5T	4-5T	9-1/2	1-13/16	3/4	2-1/4	11,000	**SBRFA5912G**
10T	8-10T	5-1/2	2-5/8	1-1/8	2-7/8	8,800	**SBRFA10512G**
10T	8-10T	7	2-5/8	1-1/8	2-7/8	12,500	**SBRFA107G**
10T	8-10T	10	2-5/8	1-1/8	2-7/8	22,000	**SBRFA1010G**

*Based on 4:1 Safety Factor and minimum capacity strength of 3500 psi with a full shear cone.

RING LIFT UNI-ANCHOR

- Used for back stripping and all types of face lifting
- Foot designed for handling large anchoring forces in concrete
- Available in 4T capacity only
- Based on a 4:1 safety factor
- Produced in compliance with our quality control system. Every batch is verified and tested for safety



Minimum reinforcing length (L) needed to develop the full strength of the anchor.

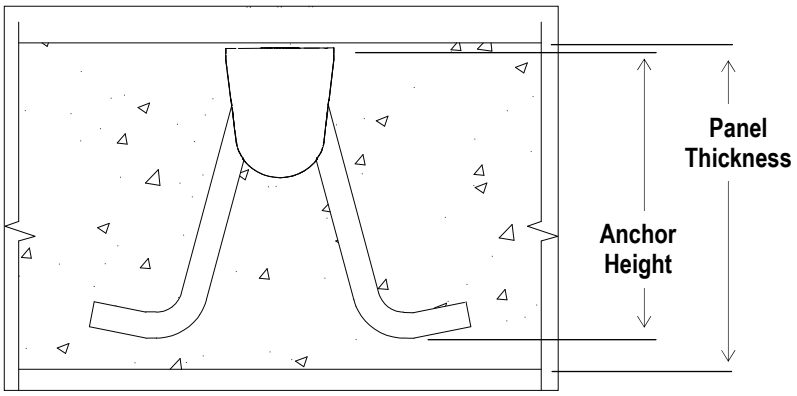
High Capacity
The wider distribution of shear forces allows for the raising of very thin-walled panels and concrete units that must be handled at low compressive strength.

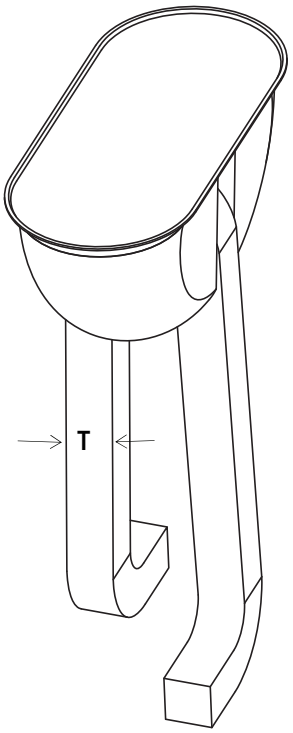
RING LIFT UNI-ANCHORS									
ANCHOR TONNAGE	CLUTCH ID	SHAFT DIAMETER (D)	ANCHOR LENGTH (L)	RING HEAD WIDTH (W)	RING HEAD THICKNESS (T)	FOOT DIAMETER (A)	SWL 4:1 SF TENSION	WEIGHT EACH	PART NUMBER
tons	#	in.	in.	in.	in.	in.	lb	lb	#
4T	4-5T	3/4	5-1/2	1-1/2	5/8	1.417	6,000	0.98	**SBRUA34512G**

Based on 4:1 Safety Factor and minimum capacity strength of 3500 psi with a full shear cone.

STRAIGHT LEG INSERT

- Optional sold as completely assembled with a plastic, one-time use former or use standard reusable former
- Designed for back shipping and rotating panels
- Used with standard Ring Lift Hardware
- Feet designed for handling large anchoring forces in concrete
- Produced in compliance with our quality control system; every match is verified and tested
- Also available in wide leg option and with bottom spacer legs





STRAIGHT LEG INSERT					
ANCHOR TONAGE	CLUTCH ID	LENGTH	THICKNESS [T]	SWL 4:1 SF TENSION	PART NUMBER
tons	#	in.	in.	lb	#
2.5T	2-2.5T	3-1/2	3/8	3,900	**SBRSL2.5T312**
2.5T	2-2.5T	5-1/2	3/8	4,600	**SBRSL2.5T512**
5T	4-5T	3-1/2	1/2	4,400	**SBRSL5T312**
5T	4-5T	4-1/2	1/2	6,200	**SBRSL5T412**
5T	4-5T	5-1/2	1/2	8,000	**SBRSL5T512**
5T	4-5T	9-1/2	5/8	11,000	**SBRSL5T912**
10T	8-10T	5-1/2	3/4	8,800	**SBRSL10T512**
10T	8-10T	7	3/4	12,500	**SBRSL10T7**
10T	8-10T	9	3/4	20,000	**SBRSL10T9**
10T	8-10T	12	3/4	22,000	**SBRSL10T12**

S.W.L. 4:1
Loads are based on min. 3500 psi concrete strength.
Base on full embedment, min. edge distance 1.5 x H.
Spacing between anchors is 3 x embedded depth.
RSL insert can be reinforced additionally by adding rebar over the foot of the insert. See details on the product RPA.

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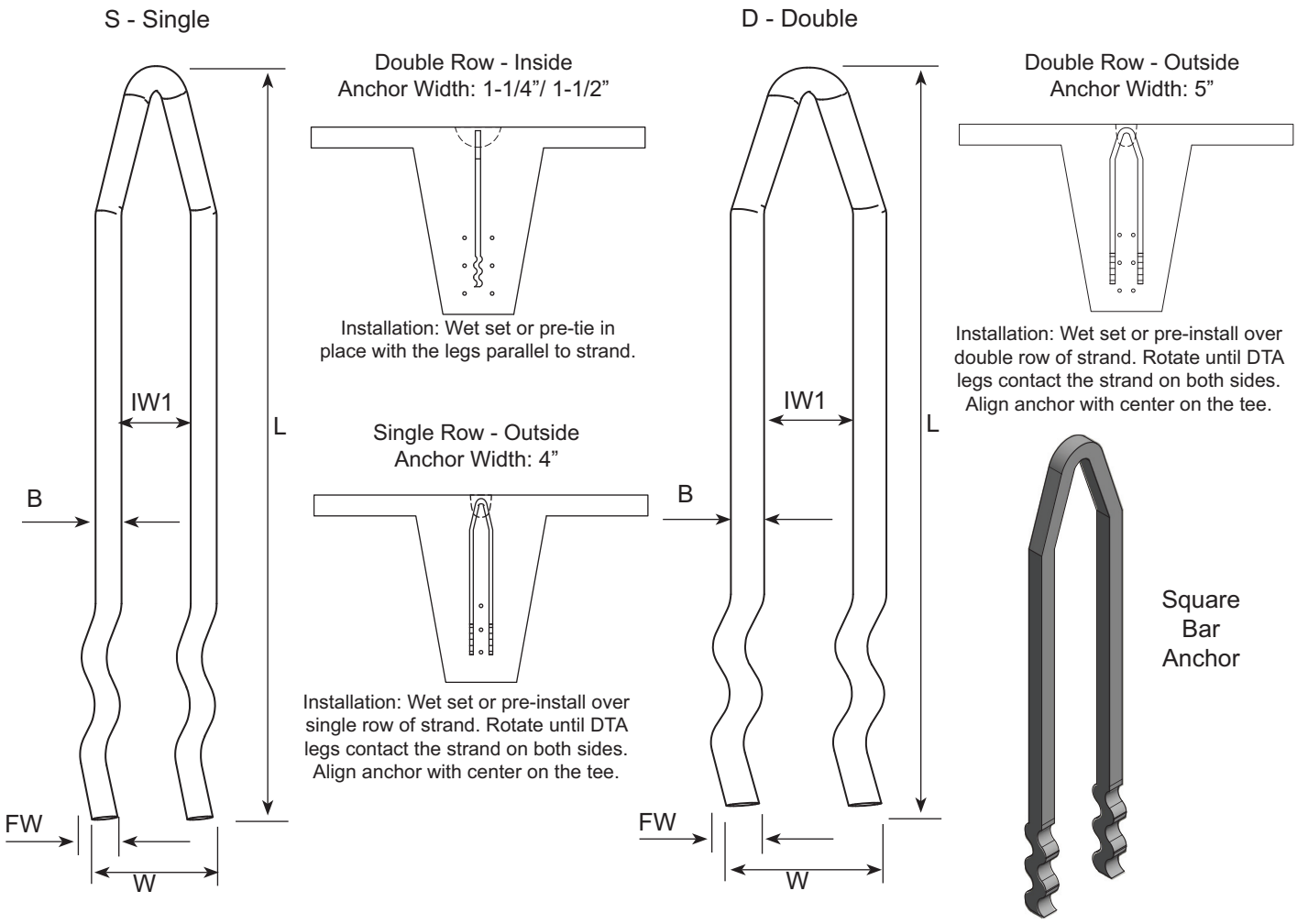
DOUBLE TEE ANCHOR

DTA 8 & 10 Ton

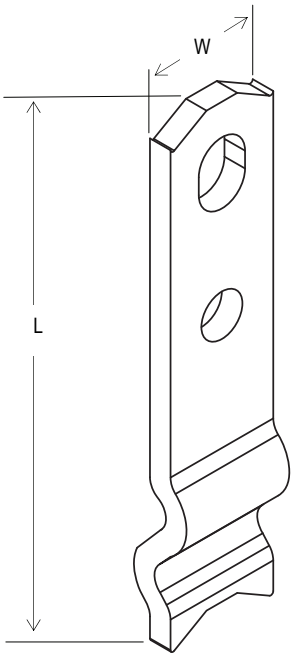
The Double Tee Anchor is designed for lifting of precast double tee's and is recessed to eliminate the job site costs of removal associated with stand lifters. The DTA is designed to utilizing 5/8 square or 3/4 round bar for 8 ton anchor and 7/8 round or 3/4 square bar for 10 ton anchor. The waves at the end ensure proper engagement of the anchor in compressed concrete zone and minimizes inference with the prestressed stands. The Double Tee Anchors are used with standard 10 ton ring lifter.



RING LIFT UNI-ANCHORS								
CAPACITY	PART NUMBER	WIDTH [W]	ANCHOR LENGTH (L)	FOOT WIDTH [FW]	BAR THICKNESS [B]	IN-CONCRETE CAPACITY 6,000 PSI 4:1 SF	ANCHOR ULTIMATE MECHANICAL CAPACITY	WEIGHT EACH
tons	#	in.	in.	in.	in.	lb	lb	lb
8T	**SBDTA8T23(S/D)**	5" (D) / 4" (S)	23	1-1/4	∅ 3/4" / ☐ 5/8	16,000	64,000	6.60
10T	**SBDTA10T23 (S/D)**	5" (D) / 4" (S)	23	1-1/2	∅ 3/4" / ☐ 5/8	22,000	88,000	8.00

Available in S - Single and D - Double, plain or zinc chromate finishes.
Minimum coverage of 3/4" from side of foot to edge of concrete.
Minimum spacing 9" from end of double tee steam.

WAVY TAIL ANCHOR



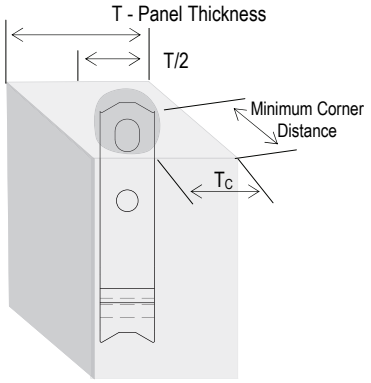
- Built for 2.5T lifting hardware
- Light duty lifting
- Ideal for lifting pipes, tanks and MSE wall panels — thin walls
- Based on a 4:1 safety factor

WAVY TAIL ANCHOR						
ANCHOR TONNAGE	CLUTCH ID	LENGTH (L)	WIDTH (W)	SAFE WORKING LOAD 4:1 SF	WEIGHT	PART NUMBER
tons	#	in.	in.	lb	lb	#
1T	2-2.5T	4-3/4	1-1/4	2,000	0.42	SBWTA14434

Use with 1 ton ring-lift former void.

Slim Wall Anchor Embedment Capacity Chart

The embedded tensile strengths of the Wavy Tail Anchor in a slim wall section is listed in the chart below. Position the anchors in the center of the wall. Secure the anchor to the reinforcing or form to ensure the proper position is maintained during the placement of the concrete and vibration.
Shear capacities based on lifter casting bearing against concrete. When use as a "back-stripping" anchor the minimum corner distance is 1.5 x the anchor length and minimum distance between adjacent anchors is 3 x the anchor length.

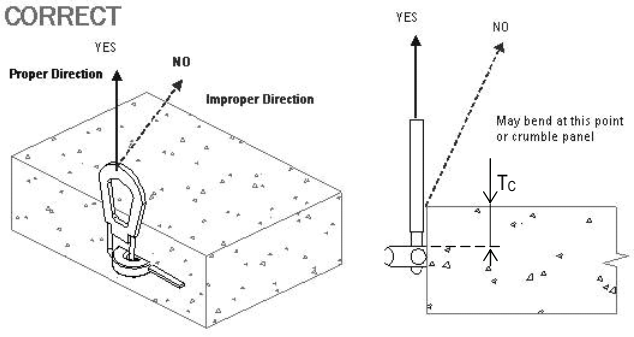


WAVY TAIL ANCHOR TENSILE CAPACITY (LENGTH 4-3/4")			
PANEL THICKNESS [T]	T / 2	TENSILE SAFE WORKING LOAD FOR ANCHOR (MIN. 8" DISTANCE) 4:1 SF	
		8"	12"
4"	2"	1,400 lb	1,600 lb
5"	2-1/2"	1,700 lb	2,000 lb
5 1/2"	2-9/16"	2,000 lb	2,000 lb

Table is based on a concrete compressive strength of 3,500 psi and 150 PCF concrete.

WAVY TAIL ANCHOR SHEAR CAPACITY			
PANEL THICKNESS [T]	T / 2	T_C	SHEAR LOAD CAPACITY 4:1 SF
4"	2"	1.375"	403 lb
5"	2-1/2"	1.875"	450 lb
5 1/2"	2-9/16"	1.925"	550 lb

Table is based on a concrete compressive strength of 3,500 psi and 150 PCF concrete.



Proper Lifting Procedure

All specifications are subject to changes.

RING LIFT PLATE ANCHOR

- Used for face and back lifts of thin walled units.
- Low profile with wide, flat base for excellent anchorage
- Horizontal plate welded to the bottom gives creates high pull-out strength in stripping, handling and erection applications.
- Capacity based on a 4:1 safety factor

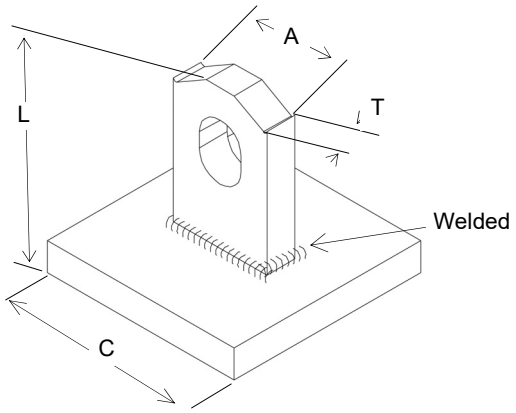


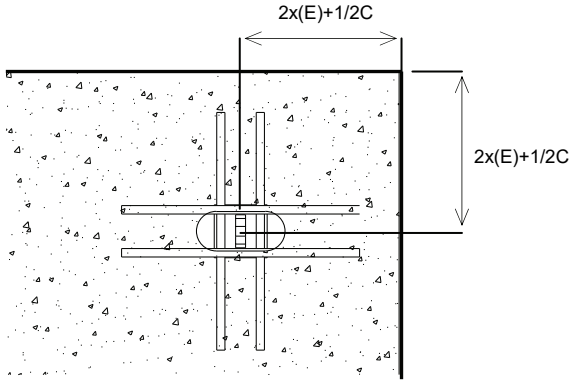
PLATE ANCHOR										
ANCHOR TONNAGE	CLUTCH ID	ANCHOR LENGTH (L)	HEAD WIDTH (A)	HEAD THICKNESS (T)	PLATE LENGTH SQUARED (C)	SAFE WORKING LOAD UNREINFORCED 3500 PSI CONCRETE TENSION	SAFE WORKING LOAD REINFORCED 3000 PSI CONCRETE TENSION	MIN. EDGE DISTANCE	WEIGHT EACH	PART NUMBER
tons	in.	in.	in.	in.	in.	lb	lb	in.	lb	#
2T	2-2.5T	2-1/4	1-1/4	3/8	2-1/2	1,100	4,000	4-1/2	0.89	**SBRPA38214G**
4T	4-5T	3	1-1/2	5/8	3	3,800	8,000	6	1.21	**SBRPA583G**
4T	4-5T	3-1/2	1-1/2	5/8	3	5,200	8,000	7	1.69	**SBRPA58312G**
4T	4-5T	4-3/8	1-1/2	5/8	4	6,200	8,000	8	1.91	**SBRPA58438G**
8T	8-10T	5-1/2	2-1/2	3/4	4	10,000	14,000	12	4.75	**SBRPA34512G**
8T	8-10T	7-1/8	2-1/2	3/4	4	14,000	16,000	15	5.50	**SBRPA34718G**

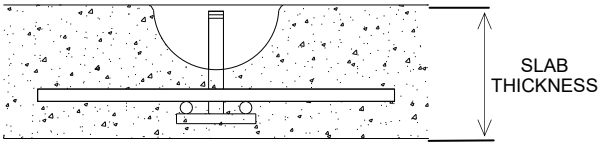
Reinforcement

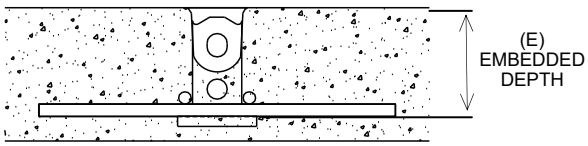
Using #5 rebar cut to a length of 18", criss-cross the base on the anchor. Maintain a minimum cover of 3/4" below the plate for concrete strength of 2,000 psi.

Note: The Plate Anchor has allowable face shear loads that are equal to or greater than unreinforced face tension loads for anchors located in a panel or concrete unit at a minimum edge distance.

Values for tension in 3,500 psi standard weight concrete with minimum edge distance is 2 times the embedded depth (E)+ 1/2 C.







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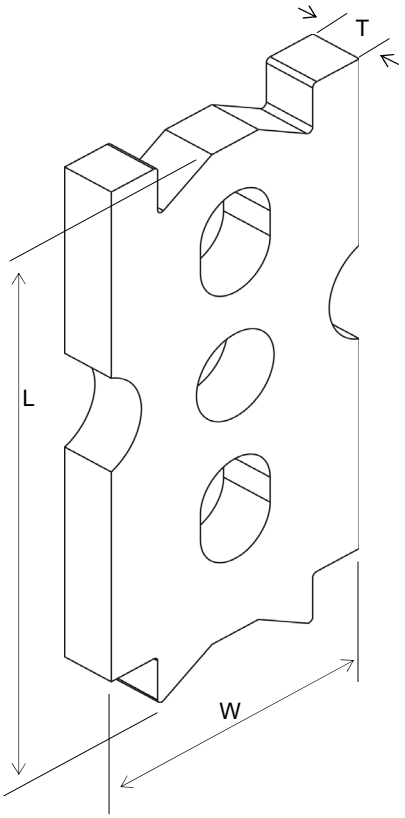
RING LIFT ERECTION ANCHOR

Combines the reinforcing capabilities of the Ring Lift Anchor with the spall-free performance of an Erection Anchor



- Ideal for an "A" frame or tilt table or whenever the lift is not straight up
- For lifts that entail only anchor tension
- Shear capacity is less than the standard erection anchor due to the shorter length
- The anchor head loads are equal to the standard erection anchor due to length
- Convex sides build better strength without adding material
- Available in 2T, 2.5T, 4T, 5T, 6T, 8T, 10T capacities
- Capacity based on a 4:1 safety factor

For Thin Slabs
The full safe working load can be achieved in thin slab by using a tension bar in the second hole or when there is low concrete strength. The table below is based on a minimum concrete capacity strength of 3500 psi and developing full shear cone.

For Further Load Distribution
The full safe working load can be achieved in thin slabs or when there is low concrete strength by using a reinforcement tension bar in the second hole.

*Minimum reinforcing tension bar length (L) needed to develop the full strength of the anchor.

RING LIFT ERECTION ANCHOR							
ANCHOR TONNAGE	CLUTCH ID	LENGTH (L)	WIDTH (W)	THICKNESS (T)	SWL 4:1 SF TENSION W/ TENSION BAR	WEIGHT EACH	PART NUMBER
tons	#	in.	in.	in.	lb	lb	#
2T	2-2.5T	4	2	3/8	4,000	0.67	SBDEA384G
2.5T	2-2.5T	4	2	3/8	5,000	0.67	SBDEA38425TG
4T	4-5T	7	2-1/2	5/8	8,000	2.80	SBDEA587G
5T	4-5T	7	2-1/2	5/8	10,000	2.80	SBDEA5875TG
6T	8-10T	7	3-1/2	5/8	12,000	3.80	SBDEA5876TG
6T	8-10T	10	3-1/2	5/8	12,000	7.50	SBDEA58106TG
8T	8-10T	7	3-1/2	3/4	16,000	4.47	SBDEA347G
8T	8-10T	13-1/2	3-1/2	3/4	16,000	8.97	SBDEA341312G
10T	8-10T	7	3-1/2	3/4	20,000	4.47	SBDEA34710TG
10T	8-10T	13-1/2	3-1/2	3/4	20,000	8.97	SBDEA34131210TG

ACCESSORIES

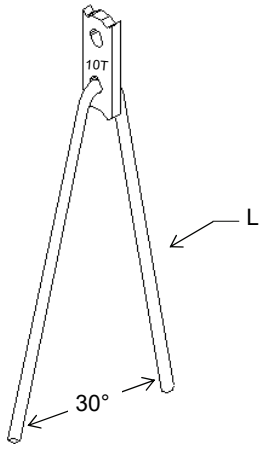
TENSION BAR

- Easy to use
- Cost efficient
- Distributes tension loads into the precast element
- Can be used with a variety of anchors

TENSION BAR				
PART NUMBER		TB2T	TB4T	TB8T
LOAD GROUP		2T-2.5T	4T-5T	6T-8T-10T
REBAR SIZE	in.	#4	#5	#6
CONCRETE STRENGTH		TOTAL TENSION BAR LENGTH* (L)		
1,500 psi.		3'0"	4'0"	6'0"
2,000 psi.		2'9"	3'6"	5'6"
2,500 psi.		2'8"	3'0"	5'0"
3,000 psi.		2'6"	3'0"	4'6"
5,000 psi.		1'8"	2'2"	3'3"

*Based on 4:1 Safety Factor

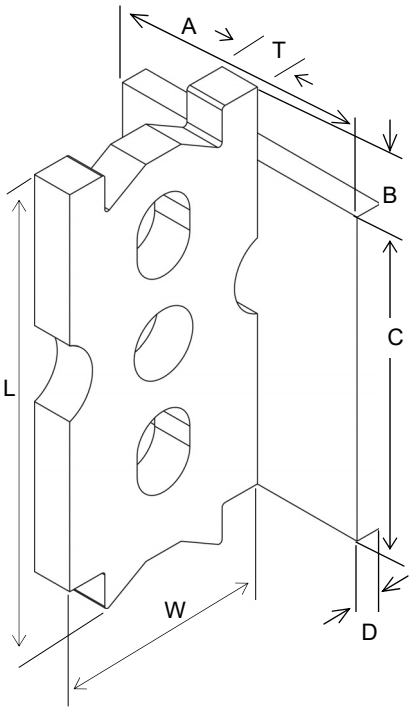
***Minimum reinforcing length (L) needed to develop the full strength of the anchor.**



MADE IN USA

All specifications are subject to changes.

RING LIFT ERECTION ANCHOR with Shear Plate



Combines the reinforcing capabilities of the Ring Lift Anchor with the spall-free performance of an Erection Anchor

- The shear plate replaces the need for a shear bar making it easier to install
- Ideal for an "A" frame or tilt table or whenever the lift is not straight up
- For lifts that entail only anchor tension
- Shear capacity is less than the standard erection anchor due to the shorter length
- The anchor's head loads are equal to the standard erection anchor due to length
- Convex sides build better strength without adding material
- Available in 2T, 2.5T, 4T, 5T, 6T, 8T, 10T capacities
- Capacity based on a 4:1 safety factor

For Thin Slabs
The shear plate replaces the need for a shear bar making it easier to install. The table below is based on a minimum concrete capacity strength of 3500 psi and developing full shear cone.

*Minimum reinforcing tension bar length (L) needed to develop the full strength of the anchor.

RING LIFT ERECTION ANCHOR WITH SHEAR PLATE

ANCHOR TONNAGE	CLUTCH ID	ANCHOR LENGTH (L)	WIDTH (W)	THICKNESS (T)	SWL 4:1 SF TENSION W/ TENSION BAR	WEIGHT EACH	PART NUMBER
tons	#	in.	in.	in.	lb	lb	#
2T	2-2.5T	4	2	3/8	4,000	1.20	**SBDEA384SPG**
2.5T	2-2.5T	4	2	3/8	5,000	1.20	**SBDEA38425TSPG**
4T	4-5T	7	2-1/2	5/8	8,000	3.57	**SBDEA587SPG**
5T	4-5T	7	2-1/2	5/8	10,000	3.57	**SBDEA5875TSPG**
6T	8-10T	7	3-1/2	5/8	12,000	6.00	**SBDEA5876TSPG**
6T	8-10T	10	3-1/2	5/8	12,000	8.00	**SBDEA58106TSPG**
8T	8-10T	7	3-1/2	3/4	16,000	8.00	**SBDEA347SPG**
8T	8-10T	13-1/2	3-1/2	3/4	16,000	10.14	**SBDEA341312SPG**
10T	8-10T	7	3-1/2	3/4	20,000	8.00	**SBDEA34710TSPG**
10T	8-10T	13-1/2	3-1/2	3/4	20,000	10.14	**SBDEA34131210TSPG**

NOTE:
There are six sets of data with regard to Tension Bars and application (page 42). If the higher loads are desired, a tension bar should be placed through the lower hole of the anchor. Consult the reinforcement charts for rebar length, diameter and bend angle.

SHEAR PLATE CHART

ANCHOR TONNAGE	CLUTCH ID	WIDTH (A)	B	LENGTH (C)	THICKNESS (D)	PART NUMBER
tons	#	in.	in.	in.	in.	#
2T	2-2.5T	2-1/2	3/4	3	1/4	**SBDEA384SPG**
2.5T	2-2.5T	2-1/2	3/4	3	1/4	**SBDEA38425TSPG**
4T	4-5T	2-1/2	1-1/4	3	3/8	**SBDEA587SPG**
5T	4-5T	2-1/2	1-1/4	3	3/8	**SBDEA5875TSPG**
6T	8-10T	3	1-5/8	3-1/2	3/8	**SBDEA5876TSPG**
6T	8-10T	3	1-5/8	3-1/2	3/8	**SBDEA58106TSPG**
8T	8-10T	3	1-5/8	3-1/2	3/8	**SBDEA347SPG**
8T	8-10T	3	1-5/8	3-1/2	3/8	**SBDEA341312SPG**
10T	8-10T	3	1-5/8	3-1/2	3/8	**SBDEA34710TSPG**
10T	8-10T	3	1-5/8	3-1/2	3/8	**SBDEA34131210TSPG**

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RING LIFT ERECTION ANCHOR WITH SHEAR PLATE LOAD TABLE

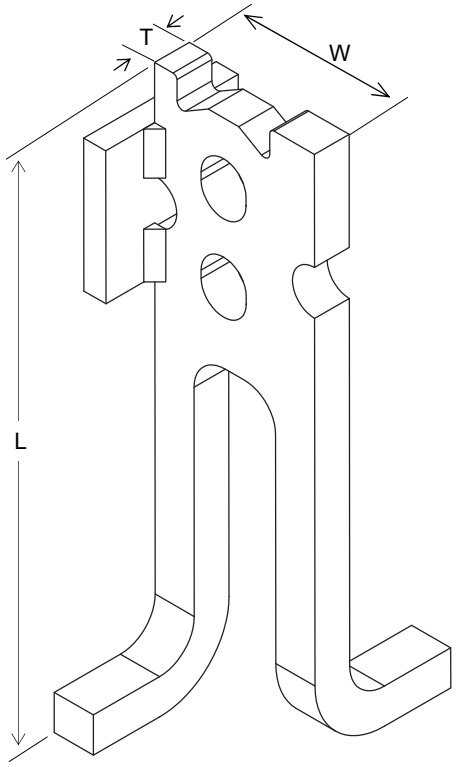
ANCHOR TONNAGE	CLUTCH ID	PANEL THICKNESS	SHEAR LOAD 4:1 SAFETY FACTOR WITH SHEAR PLATE TRANSPORTATION VALUES	SHEAR LOAD 2.66:1 SAFETY FACTOR WITH SHEAR PLATE TILT-UP VALUES	TENSION LOAD WITH TENSION BAR 4:1 SAFETY FACTOR	PART NUMBER
tons x length	#	in.	lb	lb	lb	#
2T x 4"	2-2.5T	3-1/2" minimum	1,325	1,990	4,000	SBDEA384SPG
2T x 4"	2-2.5T	4"	1,525	2,290	4,000	SBDEA384SPG
2T x 4"	2-2.5T	5"	1,525	2,290	4,000	SBDEA384SPG
2T x 4"	2-2.5T	6"	1,750	2,630	4,000	SBDEA384SPG
2T x 4"	2-2.5T	7"	1,900	2,850	4,000	SBDEA384SPG
2T x 4"	2-2.5T	8"	2,075	3,120	4,000	SBDEA384SPG
2.5T x 4"	2-2.5T	3-1/2" minimum	1,325	1,990	5,000	SBDEA38425TSPG
2.5T x 4"	2-2.5T	4"	1,525	2,290	5,000	SBDEA38425TSPG
2.5T x 4"	2-2.5T	5"	1,525	2,290	5,000	SBDEA38425TSPG
2.5T x 4"	2-2.5T	6"	1,750	2,630	5,000	SBDEA38425TSPG
2.5T x 4"	2-2.5T	7"	1,900	2,850	5,000	SBDEA38425TSPG
2.5T x 4"	2-2.5T	8"	2,075	3,120	5,000	SBDEA38425TSPG
4T x 7"	4-5T	5-1/2" minimum	2,025	3,045	8,000	SBDEA587SPG
4T x 7"	4-5T	6"	2,250	3,380	8,000	SBDEA587SPG
4T x 7"	4-5T	7"	2,600	3,900	8,000	SBDEA587SPG
4T x 7"	4-5T	8"	3,000	4,500	8,000	SBDEA587SPG
4T x 7"	4-5T	9"	3,375	5,075	8,000	SBDEA587SPG
4T x 7"	4-5T	10"	3,750	5,630	8,000	SBDEA587SPG
5T x 7"	4-5T	5-1/2" minimum	2,025	3,045	10,000	SBDEA5875TSPG
5T x 7"	4-5T	6"	2,250	3,380	10,000	SBDEA5875TSPG
5T x 7"	4-5T	7"	2,600	3,900	10,000	SBDEA5875TSPG
5T x 7"	4-5T	8"	3,000	4,500	10,000	SBDEA5875TSPG
5T x 7"	4-5T	9"	3,375	5,075	10,000	SBDEA5875TSPG
5T x 7"	4-5T	10"	3,750	5,630	10,000	SBDEA5875TSPG
6T x 7"	8-10T	7-1/2" minimum	4,010	6,030	12,000	SBDEA5876TSPG
6T x 7"	8-10T	8"	4,010	6,030	12,000	SBDEA5876TSPG
6T x 7"	8-10T	9"	4,120	6,190	12,000	SBDEA5876TSPG
6T x 7"	8-10T	10"	4,280	6,430	12,000	SBDEA5876TSPG
6T x 7"	8-10T	11"	4,420	6,645	12,000	SBDEA5876TSPG
6T x 7"	8-10T	12"	4,550	6,845	12,000	SBDEA5876TSPG
6T x 10"	8-10T	7-1/2" minimum	4,010	6,030	12,000	SBDEA58106TSPG
6T x 10"	8-10T	8"	4,010	6,030	12,000	SBDEA58106TSPG
6T x 10"	8-10T	9"	4,120	6,190	12,000	SBDEA58106TSPG
6T x 10"	8-10T	10"	4,280	6,430	12,000	SBDEA58106TSPG
6T x 10"	8-10T	11"	4,420	6,645	12,000	SBDEA58106TSPG
6T x 10"	8-10T	12"	4,550	6,845	12,000	SBDEA58106TSPG
8T x 13-1/2"	8-10T	7-1/2" minimum	4,010	6,030	16,000	SBDEA341312SPG
8T x 13-1/2"	8-10T	8"	4,010	6,030	16,000	SBDEA341312SPG
8T x 13-1/2"	8-10T	9"	4,120	6,190	16,000	SBDEA341312SPG
8T x 13-1/2"	8-10T	10"	4,280	6,430	16,000	SBDEA341312SPG
8T x 13-1/2"	8-10T	11"	4,420	6,645	16,000	SBDEA341312SPG
8T x 13-1/2"	8-10T	12"	4,550	6,845	16,000	SBDEA341312SPG
10T x 13-1/2"	8-10T	7-1/2" minimum	4,010	6,030	20,000	SBDEA34131210TSPG
10T x 13-1/2"	8-10T	8"	4,010	6,030	20,000	SBDEA34131210TSPG
10T x 13-1/2"	8-10T	9"	4,120	6,190	20,000	SBDEA34131210TSPG
10T x 13-1/2"	8-10T	10"	4,280	6,430	20,000	SBDEA34131210TSPG
10T x 13-1/2"	8-10T	11"	4,420	6,645	20,000	SBDEA34131210TSPG
10T x 13-1/2"	8-10T	12"	4,550	6,845	20,000	SBDEA34131210TSPG

- Tilt-Up values can be used for shear if an anchor is used only once for erecting the panel.
- The 4:1 safety factor is used in precast work and normally requires no increases.
- Given full embedment, reinforcement and minimum compressive strength as shown on Erection Anchors should achieve a pullout strength equal to their maximum tension strength if reinforced with a Tension Bar.
- Table based on a concrete compressive strength of 3,500 psi.

STRAIGHT LEG ERECTION ANCHOR with Shear Plate

Ideal for horizontal to vertical edge lifts and the shear rotation of thin-walled units

- The shear plate replaces the need for a shear bar making it easier to install
- Specially designed head provides added protection against spalling
- Specially designed body allows for full reinforcement



Superior Design – Two steel protrusions or "ears" on the head of the anchor provide added protection against spalling. These ears hug either side of the ring clutch, restricting its rotation during lateral pulls. As a result, lateral forces are transmitted directly to the edges of the anchor instead of the concrete. The body of the Erection Anchor is shaped to allow full reinforcement for secure support and spall-free rotation.

Eliminates the need for a Shear Bar – The shear plate replaces the need for a shear bar making it easier to install.

For Further Load Distribution – The full safe working load can be achieved in thin slabs or when there is low concrete strength by using a reinforcement tension bar in the second hole. See tension bar table for details.

STRAIGHT LEG ERECTION ANCHOR WITH SHEAR PLATE

ANCHOR TONNAGE	PART NUMBER	WIDTH	THICKNESS	LENGTH
tons	#	in.	in.	in.
2T	SBSLE2TSPG	2-3/8	3/8	8
4T	SBSLE4TSPG	3-1/16	5/8	10-1/2
8T	SBSLE8TSPG	3-5/8	3/4	13-1/2

Standard hot-dip galvanized finish.

STRAIGHT LEG ERECTION ANCHOR WITH SHEAR PLATE LOAD TABLE

PART NUMBER	CAPACITY	PANEL THICKNESS	SHEAR LOAD 4:1 SAFETY FACTOR (NO SHEAR BAR) TRANSPORTATION VALUES	TENSION W/O TENSION BAR 4:1 SAFETY FACTOR	SAFE WORKING LOAD W/ TENSION BAR 4:1 SAFETY FACTOR
#	T	in.	in.	in.	in.
SBSLE2TSPG	2T	4 min.	1,800	3,190	4,400
		5	2,000	3,900	4,400
		5-1/2	2,400	4,000	4,400
		6	2,800	4,000	4,400
		7	3,300	4,400	4,400
		8	3,600	4,400	4,400
		9	3,800	4,400	4,400
		10	4,000	4,400	4,400
		11	4,200	4,400	4,400
		12	4,400	4,400	4,400
SBSLE4TSPG	4T	5-1/2 min.	3,100	4,970	8,800
		6	3,200	5,170	8,800
		7	3,700	6,030	8,800
		8	4,000	6,910	8,800
		9	4,300	7,750	8,800
		10	4,600	8,000	8,800
		11	5,000	8,800	8,800
		12	5,000	8,800	8,800
SBSLE8TSPG	8T	7-1/2 min.	4,300	7,500	17,600
		8	4,500	7,690	17,600
		9	5,000	8,640	17,600
		10	5,500	9,580	17,600
		11	6,200	11,500	17,600
		12	6,900	13,200	17,600

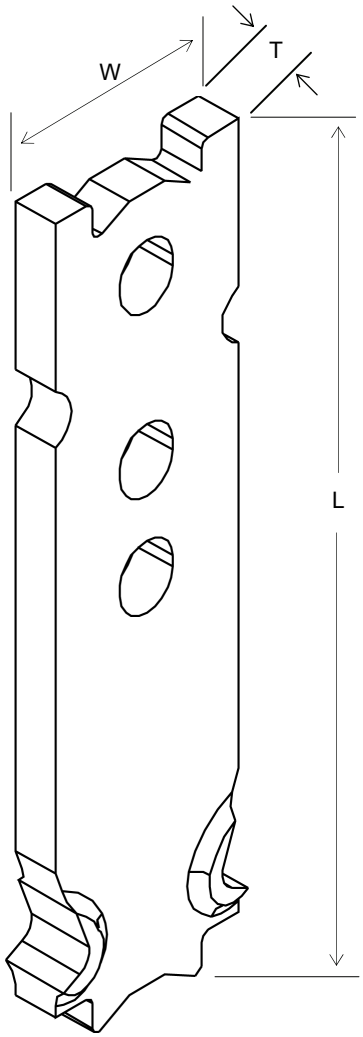
Based on 4:1 SF in 3500 p.s.i. in concrete

- Tilt-Up values can be used for shear if an anchor is used only once for erecting the panel.
- The 4:1 safety factor is used in precast work and normally requires no increases.
- Given full embedment, reinforcement and minimum compressive strength should achieve a pullout strength equal to their maximum tension strength if reinforced with a Tension Bar.

X-FOOT ERECTION ANCHOR

For horizontal to vertical edge lifts and shear rotation of thin-walled units.

- Specially designed head provides added protection against spalling
- For lifts applying shear and tension to the anchor
- Specially designed body allows for full reinforcement
- Available in 2T, 4T, 6T, 8T or 10T capacities
- Capacity based on a 4:1 safety factor



Superior Design
Two steel protrusions or "ears" on the head of the anchor provide added protection against spalling. These ears hug either side of the ring clutch, restricting its rotation during lateral pulls. As a result, lateral forces are transmitted directly to the edges of the anchor instead of the concrete. The body of the Erection Anchor is shaped to allow full reinforcement for secure support.

Shear Bar for Extra reinforcement
Because of the stress caused by the shear lift of a thin panel, reinforcement is necessary in the direction of the lift. SureBuilt Manufacturing can supply **Shear Bars** designed expressly for this purpose. Place the Shear Bar in the notch on the side of the anchor as shown on page 48.

For Further Load Distribution
The full safe working load can be achieved in thin slabs or when there is low concrete strength by using a reinforcement tension bar in the second hole.

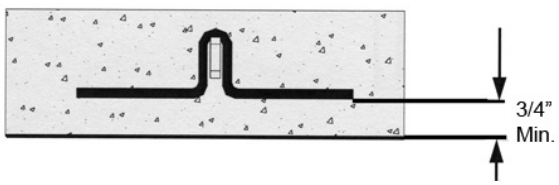
X-FOOT ERECTION ANCHOR							
ANCHOR TONNAGE	CLUTCH ID	ANCHOR WIDTH (W)	ANCHOR LENGTH (L)	ANCHOR THICKNESS (T)	SWL 4:1 SF TENSION	WEIGHT EACH	PART NUMBER
tons	#	in.	in.	in.	lb	lb	#
2T	2-2.5T	2	8	3/8	4,000	1.59	**SBSFEA2TG**
4T	4-5T	2-1/2	9-1/2	5/8	8,000	4.20	**SBSFEA4TG**
6T	8-10T	3-1/2	10	5/8	12,000	8.00	**SBSFEA6TG**
8T	8-10T	3-1/2	13-1/2	3/4	16,000	9.30	**SBSFEA8TG**
10T	8-10T	3-1/2	13-1/2	3/4	20,000	9.30	**SBSFEA10TG**

MADE IN USA

ACCESSORIES
SHEAR BARS FOR X-FOOT ERECTION ANCHOR

- Safe and dependable
- Stronger, less expensive, and easier to use than fabricated rebar
- Available in 2T, 4T, 6T, 8T or 10T capacities
- Based on a 4:1 safety factor

SHEAR BAR					
ANCHOR TONNAGE	CLUTCH ID	SHEAR BAR HEIGHT (A)	MINIMUM PANEL THICKNESS	WEIGHT EACH	PART NUMBER
#	#	in.	in.	lb	#
2T	2-2.5T	2-1/2	4	0.98	**SB2T**
4T	4-5T	3-5/16	5-1/2	1.07	**SB4T**
6T-8T-10T	8-10T	4-15/16	7-1/2	1.23	**SB8T**



All specifications are subject to changes.

NOTES:
During rotation, it is recommended that the sling angle be perpendicular to the surface. While the panel is being rotated on its edge, the load can usually be factored by 0.5. During this phase of the lift, the anchors are not bearing the full weight of the panel. The rated loads and minimum panel thicknesses can be found in the accompanying table.

Once the panel has been rotated to vertical, the tension lift is initiated. During the tension phase of the lift, the Erection Anchor will work like the *Two-Hole Anchor*.

There are two sets of data with regard to Tension Bars. If the higher loads are desired, a tension bar should be placed through the lower hole of the anchor. Consult the reinforcement charts for rebar length, diameter and bend angle.

X-FOOT ERECTION ANCHOR LOAD TABLE

ANCHOR TONNAGE	CLUTCH ID	PANEL THICKNESS	SHEAR LOAD WITH SHEAR BAR 4:1 SAFETY FACTOR	TENSION LOAD W/O TENSION BAR 4:1 SAFETY FACTOR	TENSION LOAD WITH TENSION BAR 4:1 SAFETY FACTOR
tons x length	#	in.	lb	lb	lb
2T x 8”	2-2.5T	4 min.	1,490	3,190	4,000
2T x 8”	2-2.5T	5	2,110	3,900	4,000
2T x 8”	2-2.5T	5-1/2	2,130	4,000	4,000
2T x 8”	2-2.5T	6	2,520	4,000	4,000
2T x 8”	2-2.5T	7	2,870	4,000	4,000
2T x 8”	2-2.5T	8	3,160	4,000	4,000
2T x 8”	2-2.5T	9	3,420	4,000	4,000
2T x 8”	2-2.5T	10	3,640	4,000	4,000
2T x 8”	2-2.5T	11	3,840	4,000	4,000
2T x 8”	2-2.5T	12	4,000	4,000	4,000
4T x 9-1/2”	4-5T	5-1/2 min	2,670	4,970	8,000
4T x 9-1/2”	4-5T	6	2,990	5,170	8,000
4T x 9-1/2”	4-5T	7	3,170	6,030	8,000
4T x 9-1/2”	4-5T	8	3,430	6,910	8,000
4T x 9-1/2”	4-5T	9	3,650	7,750	8,000
4T x 9-1/2”	4-5T	10	3,860	8,000	8,000
4T x 9-1/2”	4-5T	11	3,930	8,000	8,000
4T x 9-1/2”	4-5T	12	4,010	8,000	8,000
6T x 10”	8-10T	7-1/2 min	4,010	7,220	12,000
6T x 10”	8-10T	8	4,010	7,690	12,000
6T x 10”	8-10T	9	4,120	8,640	12,000
6T x 10”	8-10T	10	4,280	9,580	12,000
6T x 10”	8-10T	11	4,420	10,610	12,000
6T x 10”	8-10T	12	4,550	11,680	12,000
8T x 13-1/2”	8-10T	7-1/2 min	4,010	7,220	16,000
8T x 13-1/2”	8-10T	8	4,010	7,690	16,000
8T x 13-1/2”	8-10T	9	4,120	8,640	16,000
8T x 13-1/2”	8-10T	10	4,280	9,580	16,000
8T x 13-1/2”	8-10T	11	4,420	10,610	16,000
8T x 13-1/2”	8-10T	12	4,550	11,680	16,000
10T x 13-1/2”	8-10T	7-1/2 min	4,010	7,220	20,000
10T x 13-1/2”	8-10T	8	4,010	7,690	20,000
10T x 13-1/2”	8-10T	9	4,120	8,640	20,000
10T x 13-1/2”	8-10T	10	4,280	9,580	20,000
10T x 13-1/2”	8-10T	11	4,420	10,610	20,000
10T x 13-1/2”	8-10T	12	4,550	11,680	20,000

Notes:

- The 4:1 safety factor is used in precast work and normally requires no increases.
- Given full embedment, reinforcement and minimum compressive strength as shown on Erection Anchors should achieve a pullout strength equal to their Ultimate Mechanical Strength if reinforced with a Tension Bar.
- Table based on a concrete compressive strength of 3,500 psi.

X-FOOT ERECTION ANCHOR
with Shear Plate

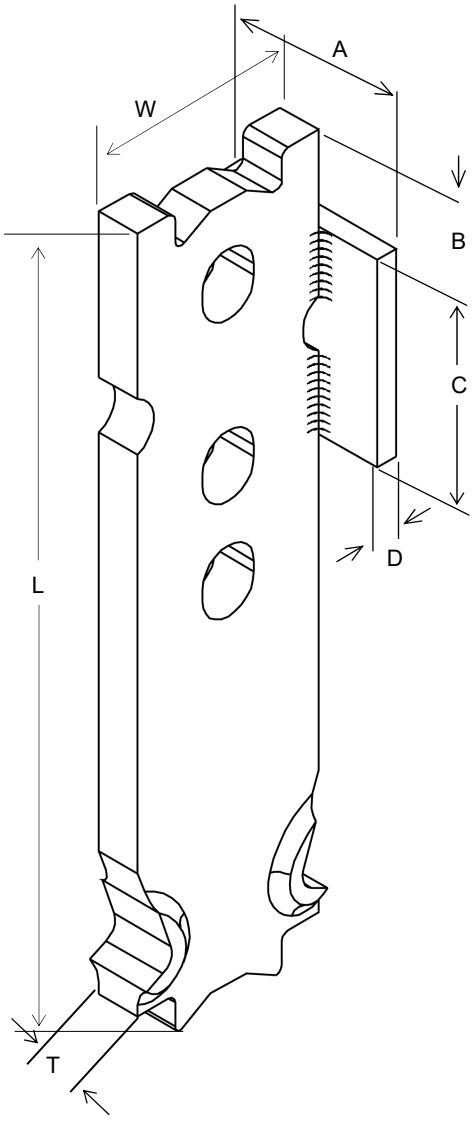
For horizontal to vertical edge lifts and the shear rotation of thin-walled units.

- The shear plate replaces the need for a shear bar making it easier to install
- No special ring clutch or recessing members necessary
- Specially-designed head provides added protection against spalling
- Specially-designed body allows for full reinforcement
- Available in 2T, 4T, 6T, 8T or 10T capacities
- Capacity based on a 4:1 safety factor

Superior Design
Two steel protrusions or “ears” on the head of the anchor provide added protection against spalling. These ears hug either side of the ring clutch, restricting its rotation during lateral pulls. As a result, lateral forces are transmitted directly to the edges of the anchor instead of the concrete. The body of the Erection Anchor is shaped to allow full reinforcement for secure support and spall-free rotation.

Eliminates the Need for a Shear Bar
The shear plate replaces the need for a shear bar making it easier to install.

For Further Load Distribution
The full safe working load can be achieved in thin slabs or when there is low concrete strength by using a reinforcement tension bar in the second hole.



X-FOOT ERECTION ANCHOR W/ SHEAR PLATE							
ANCHOR TONNAGE	CLUTCH ID	ANCHOR WIDTH (W)	ANCHOR LENGTH (L)	ANCHOR THICKNESS (T)	SAFE WORKING LOAD TENSION	WEIGHT EACH	PART NUMBER
tons	#	in.	in.	in.	lb	lb	#
2T	2-2.5T	2	8	3/8	4,000	2.15	**SBSFEA2TPG**
4T	4-5T	2-1/2	9-1/2	5/8	8,000	4.60	**SBSFEA4TPG**
6T	8-10T	3-1/2	10	5/8	12,000	8.75	**SBSFEA6TPG**
8T	8-10T	3-1/2	13-1/2	3/4	16,000	10.30	**SBSFEA8TPG**
10T	8-10T	3-1/2	13-1/2	3/4	20,000	10.30	**SBSFEA10TPG**

Based on 4:1 Safety Factor

SHEAR PLATE CHART						
ANCHOR TONNAGE	CLUTCH ID	WIDTH (A)	B	LENGTH (C)	THICKNESS (D)	PART NUMBER
tons	#	in.	in.	in.	lb	#
2T	2-2.5T	2-1/2	3/4	3	1/4	**SBSFEA2TPG**
4T	4-5T	2-1/2	1-1/4	3	3/8	**SBSFEA4TPG**
6T	8-10T	3	1-5/8	3-1/2	3/8	**SBSFEA6TPG**
8T	8-10T	3	1-5/8	3-1/2	3/8	**SBSFEA8TPG**
10T	8-10T	3	1-5/8	3-1/2	3/8	**SBSFEA10TPG**

MADE IN USA

All specifications are subject to changes.

NOTES:
During rotation, it is recommended that the sling angle be perpendicular to the surface. While the panel is being rotated on its edge, the load can usually be factored by 0.5. During this phase of the lift, the anchors are not bearing the full weight of the panel. The rated loads and minimum panel thicknesses can be found in the accompanying table.

Once the panel has been rotated to vertical, the tension lift is initiated. During the tension phase of the lift, the Erection Anchor will work like the *Two-Hole Anchor*.

There are two sets of data with regard to Tension Bars. If the higher loads are desired, a tension bar should be placed through the lower hole of the anchor. Consult the reinforcement charts for rebar length, diameter and bend angle.

X-FOOT ERECTION ANCHOR WITH SHEAR PLATE LOAD TABLE

ANCHOR TONNAGE	CLUTCH ID	PANEL THICKNESS	SHEAR LOAD WITH SHEAR PLATE 4:1 SAFETY FACTOR	TENSION LOAD W/O TENSION BAR 4:1 SAFETY FACTOR	TENSION LOAD WITH TENSION BAR 4:1 SAFETY FACTOR
tons x length	#	in.	lb	lb	lb
2T x 8"	2-2.5T	3-1/2 min	1,490	2,640	4,000
2T x 8"	2-2.5T	4	1,940	3,190	4,000
2T x 8"	2-2.5T	5	2,110	3,900	4,000
2T x 8"	2-2.5T	5-1/2	2,130	4,000	4,000
2T x 8"	2-2.5T	6	2,520	4,000	4,000
2T x 8"	2-2.5T	7	2,870	4,000	4,000
2T x 8"	2-2.5T	8	3,160	4,000	4,000
2T x 8"	2-2.5T	9	3,420	4,000	4,000
2T x 8"	2-2.5T	10	3,640	4,000	4,000
2T x 8"	2-2.5T	11	3,840	4,000	4,000
2T x 8"	2-2.5T	12	4,000	4,000	4,000
4T x 9-1/2"	4-5T	4 min	1,800	3,400	8,000
4T x 9-1/2"	4-5T	5-1/2	2,670	4,970	8,000
4T x 9-1/2"	4-5T	6	2,990	5,170	8,000
4T x 9-1/2"	4-5T	7	3,170	6,030	8,000
4T x 9-1/2"	4-5T	8	3,430	6,910	8,000
4T x 9-1/2"	4-5T	9	3,650	7,750	8,000
4T x 9-1/2"	4-5T	10	3,860	8,000	8,000
4T x 9-1/2"	4-5T	11	3,930	8,000	8,000
4T x 9-1/2"	4-5T	12	4,010	8,000	8,000
6T x 10"	8-10T	7 min	4,010	7,100	12,000
6T x 10"	8-10T	7-1/2	4,010	7,220	12,000
6T x 10"	8-10T	8	4,010	7,690	12,000
6T x 10"	8-10T	9	4,120	8,640	12,000
6T x 10"	8-10T	10	4,280	9,580	12,000
6T x 10"	8-10T	11	4,420	10,610	12,000
6T x 10"	8-10T	12	4,550	11,680	12,000
8T x 13-1/2"	8-10T	7 min	4,010	7,100	16,000
8T x 13-1/2"	8-10T	7-1/2	4,010	7,220	16,000
8T x 13-1/2"	8-10T	8	4,010	7,690	16,000
8T x 13-1/2"	8-10T	9	4,120	8,640	16,000
8T x 13-1/2"	8-10T	10	4,280	9,580	16,000
8T x 13-1/2"	8-10T	11	4,420	10,610	16,000
8T x 13-1/2"	8-10T	12	4,550	11,680	16,000
10T x 13-1/2"	8-10T	7 min	4,010	7,100	20,000
10T x 13-1/2"	8-10T	7-1/2	4,010	7,220	20,000
10T x 13-1/2"	8-10T	8	4,010	7,690	20,000
10T x 13-1/2"	8-10T	9	4,120	8,640	20,000
10T x 13-1/2"	8-10T	10	4,280	9,580	20,000
10T x 13-1/2"	8-10T	11	4,420	10,610	20,000
10T x 13-1/2"	8-10T	12	4,550	11,680	20,000

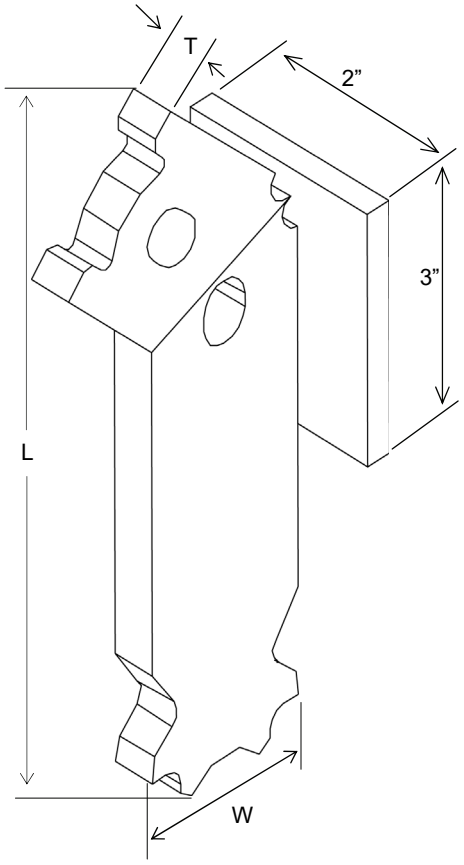
Notes:

- The 4:1 safety factor is used in precast work and normally requires no increases.
- Given full embedment, reinforcement and minimum compressive strength as shown on Erection Anchors should achieve a pullout strength equal to their Ultimate Mechanical Strength if reinforced with a Tension Bar.
- Table based on a concrete compressive strength of 3,500 psi.

X-FOOT ERECTION ANCHOR WITH 45° HEAD and Shear Plate

For use when the lifting edge is beveled at a 45° angle. The factory installed shear plate eliminates the need for any additional shear reinforcement.

- The shear plate replaces the need for a shear bar making it easier to install
- No special ring clutch or recessing members necessary
- Specially-designed head when desired lifting edge is beveled at a 45° angle
- Specially-designed body allows for full reinforcement
- Available in 2T, 4T, or 8T capacities
- Capacity based on a 4:1 safety factor



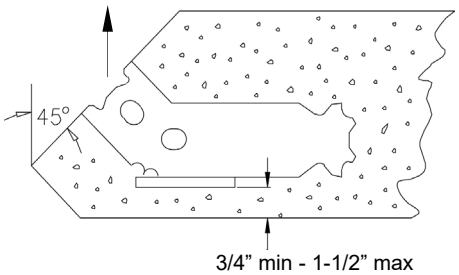
Eliminates the Need for a Shear Bar
The shear plate replaces the need for a shear bar making it easier to install.

For Further Load Distribution
The full safe working load can be achieved in thin slabs or when there is low concrete strength by using a reinforcement tension bar in the second hole.

X-FOOT ERECTION ANCHOR W/ 45° HEAD AND SHEAR PLATE									
ANCHOR TONNAGE	CLUTCH ID	ANCHOR WIDTH (W)	ANCHOR LENGTH (L)	ANCHOR THICKNESS (T)	PANEL THICKNESS	SHEAR SWL	TENSION W/TENSION BAR	WEIGHT EACH	PART NUMBER
tons	#	in.	in.	in.	in.	lb	lb	lb	#
2T	2-2.5T	2	8-1/2	3/8	6-1/2	2,150	3,400	2.30	SBSFEA2TMITEREDG
4T	4-5T	2-1/2	11-1/8	5/8	8	3,500	5,400	5.50	SBSFEA4TMITEREDG
8T	8-10T	3-3/4	13-3/4	3/4	8 min	3,500	6,200	10.50	SBSFEA8TMITEREDG

Based on 3,500 psi concrete stength.

Installation
To install the X-Foot Erection Anchor with 45° head and shear plate, position the anchor a minimum of 3/4" and a maximum of 1-1/2" clear of the casting bed. After the anchor has been secured in place, tension reinforcement may be added, if desired. After the concrete has set, removal of the edge form and recess member will expose the head of the anchor for easy attachment of the lifting eye.



Notes:
- The 4:1 safety factor is used in precast work and normally requires no increases.
- Due to the design of this anchor, DO NOT attempt to use this anchor at loads higher than shown in this table – even with a properly installed tension bar.
- For this application, panel will not hang plumb. Do not exceed loads shown in table.

MADE IN USA

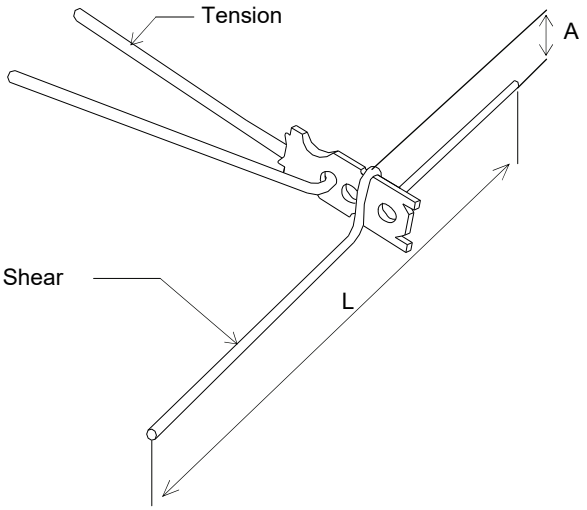
All specifications are subject to changes.

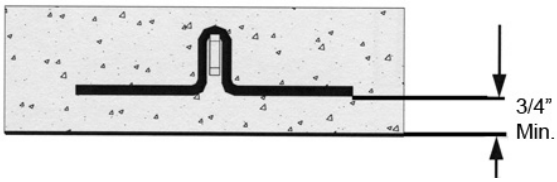
ACCESSORIES

SHEAR BARS FOR X-FOOT ERECTION ANCHOR

- Safe and dependable
- Stronger, less expensive, and easier to use than fabricated rebar
- Available in 2T, 4T, or 8T capacities
- Capacity based on a 4:1 safety factor

The Shear Bar provides simple and economical reinforcement for the erection anchor during the rotation phase of edge lifts. The loop on the shear bar fits over the erection anchor to spread shear stress over a wide area and deep into the concrete.

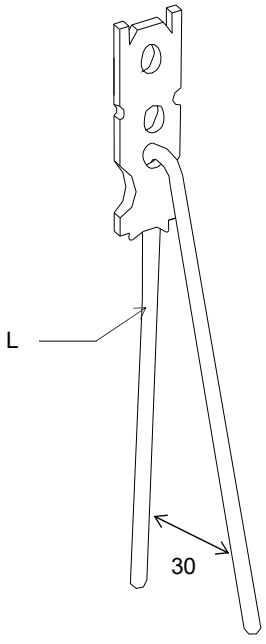




SHEAR BAR						
ANCHOR TONNAGE	CLUTCH ID	SHEAR BAR HEIGHT (A)	LENGTH (L)	MINIMUM PANEL THICKNESS	WEIGHT EACH	PART NUMBER
#	#	in.	in.	in.	lb	#
2T	2-2.5T	2-1/2	13-7/8	4	0.75	**SB2T**
4T	4-5T	3-5/16	13-7/8	5-1/2	0.78	**SB4T**
8T	8-10T	4-5/16	13-7/8	7-1/2	0.91	**SB8T**

TENSION BAR

- Easy to use
- Cost efficient
- Distributes tension loads into the precast element
- Can be used with a variety of anchors



TENSION BAR				
PART NUMBER		TB2T	TB4T	TB8T
LOAD GROUP		2T-2.5T	4T-5T	8T-10T
REBAR SIZE	in.	#4	#5	#6
CONCRETE STRENGTH		TOTAL TENSION BAR LENGTH (L)		
1,500 psi.		3'0"	4'0"	6'0"
2,000 psi.		2'9"	3'6"	5'6"
2,500 psi.		2'8"	3'0"	5'0"
3,000 psi.		2'6"	3'0"	4'6"
5,000 psi.		1'8"	2'2"	3'3"

Based on 4:1 Safety Factor

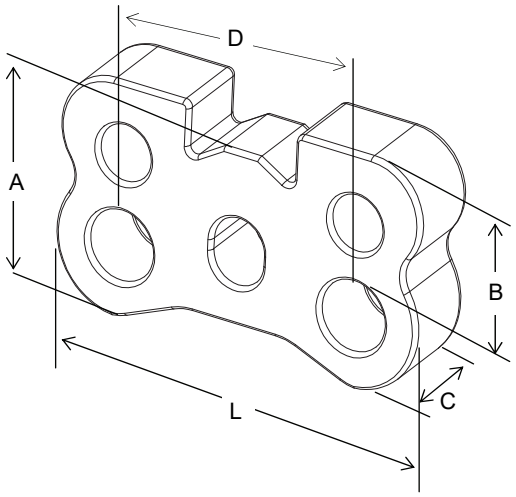
Minimum reinforcing length (L) needed to develop the full strength of the anchor.

HEAVY DUTY SANDWICH PANEL ERECTION ANCHOR

Patent pending

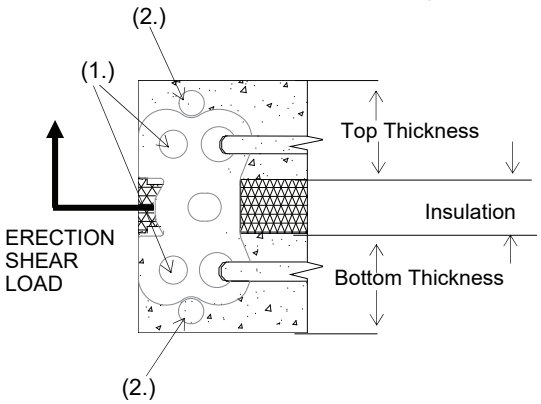
By delivering an even load distribution to both sides of a sandwich panel, the HD Sandwich Panel Erection Anchor transfers the highest loads on panel edge. No shear plate required.

- Easy to install
- Eliminates the need for special shear bars
- Distributes the load evenly to both widths
- Specially-designed anchor head absorbs shear loads without spalling concrete
- Additional shear reinforcement can be placed to increase shear capacity



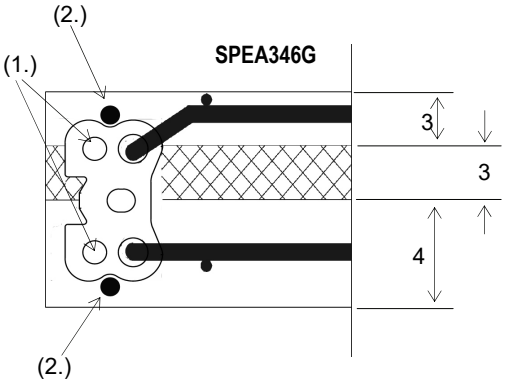
HD SANDWICH PANEL ERECTION ANCHOR								
ANCHOR TONNAGE	CLUTCH ID	L	A	B	C	D	WEIGHT EACH	PART NUMBER
#	#	in.	in.	in.	in.	in.	lb	#
Plasma Cut 8T								
8T	8-10T	6	3-3/4	2-29/32	3/4	4	4.25	SBPCSPEA346G
Drop Forged 10T								
10T	8-10T	6	3-3/4	2-29/32	3/4	4	4.25	SBDFSPEA346G

*Based on 4:1 Safety Factor



HD SANDWICH PANEL ANCHOR FOR 9" THICK PANELS (3"x 3"x 3")				
ANCHOR TONNAGE	TENSION	SHEAR-PARALLEL TO THICKNESS 2.66:1	SHEAR-PARALLEL TO THICKNESS 4:1	SHEAR-PERPENDICULAR TO THICKNESS 4:1 SF
tons	lb	lb	lb	lb
8T	17,600	5,700	4,200	9,400
10T	20,000	5,700	4,200	10,500

*Based on 4:1 Safety Factor with reinforcement bar through anchor (1.)
(2.) Additional shear bar can be placed on side of anchor to increase shear load. Shear bar #5 min 24" long.



HD SANDWICH PANEL ANCHOR FOR 10" THICK PANELS (4"X 3"X 3")				
ANCHOR TONNAGE	TENSION	SHEAR-PARALLEL TO THICKNESS 2.66:1	SHEAR-PARALLEL TO THICKNESS 4:1	SHEAR-PERPENDICULAR TO THICKNESS 4:1 SF
tons	lb	lb	lb	lb
8T	17,600	7,200	4,800	10,500
10T	20,000	7,200	4,800	10,500

*Based on 4:1 Safety Factor with reinforcement bar through anchor (1.)
(2.) Additional shear bar can be placed on side of anchor to increase shear load. Shear bar #5 min 24" long.
(1.) and (2.) shear bar 8 and 10 ton #5 x 24", tension bar 8 ton #5 x 3'6", tension bar 10 ton #6 x 3'6".

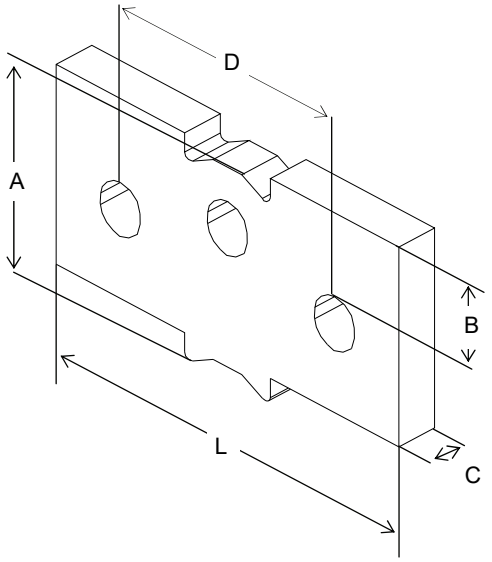
- The 4:1 safety factor is used with precast work and normally requires no increases except for cable magnification.
- Given full embedment, reinforcement, and a minimum compressive strength of 4,500 psi, the **8-10 ton Sandwich Panel Erection Anchors** should achieve a pullout strength equal to their Ultimate Mechanical Strength if reinforced with (2) #6 x3'-6" long bent.
- The 2.66:1 safety factor, is a 2:1 safety factor, which is commonly used when back shipping, increased 33% to compensate for initial bond and impact. Additional increases due to unusual live loads or cable magnification may be required for some applications.
- 8 ton also available in 7-8" heights (L).

All specifications are subject to changes.

SANDWICH PANEL ERECTION ANCHOR

By delivering an even load distribution to both sides of a sandwich panel, the Sandwich Panel Erection Anchor eliminates the need for special lifting devices.

- Easy to install
- Eliminates the need for special spreader bars
- Distributes the load evenly to both widths
- Specially-designed anchor head absorbs shear loads without spalling concrete

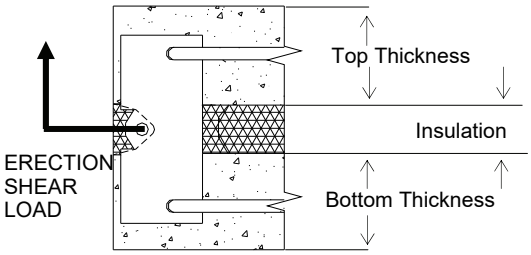


SANDWICH PANEL ERECTION ANCHOR								
ANCHOR TONNAGE	CLUTCH ID	L	A	B	C	D	WEIGHT EACH	PART NUMBER
#	#	in.	in.	in.	in.	in.	lb	#
4T	4-5T	6	3-1/2	1-3/8	5/8	3-3/4	3.10	**SBSPEA586G**
5T	4-5T	6	3-1/2	1-3/8	5/8	3-3/4	3.20	**SBSPEA5865TG**
8T	8-10T	6	3-3/4	2-29/32	3/4	4	5.25	**SBSPEA346G**
10T	8-10T	6	3-3/4	2-29/32	3/4	4	5.25	**SBSPEA34610TG**

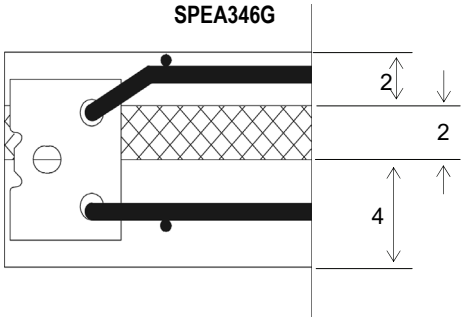
*Based on 4:1 Safety Factor

PANEL SANDWICH ANCHOR FOR 8" THICK PANELS (3"x 2"x 3")			
ANCHOR TONNAGE	TENSION	SHEAR-PARALLEL TO THICKNESS 2.66:1	SHEAR-PERPENDICULAR TO THICKNESS 4:1 SF
tons	lb	lb	lb
4T	8,000	4,500	8,000
5T	10,000	4,500	8,000
8T	16,000	5,170	9,400
10T	20,000	5,170	9,400

*Based on 4:1 Safety Factor



PANEL SANDWICH ANCHOR FOR 8" THICK PANELS (4"X 2"X 2")			
ANCHOR TONNAGE	TENSION	SHEAR-PARALLEL // TO THICKNESS 2.66:1	SHEAR-PERPENDICULAR TO THICKNESS 4:1 SF
tons	lb	lb	lb
4T	8,000	4,950	8,000
5T	10,000	4,950	8,000
8T	16,000	5,200	10,500
10T	20,000	5,200	10,500



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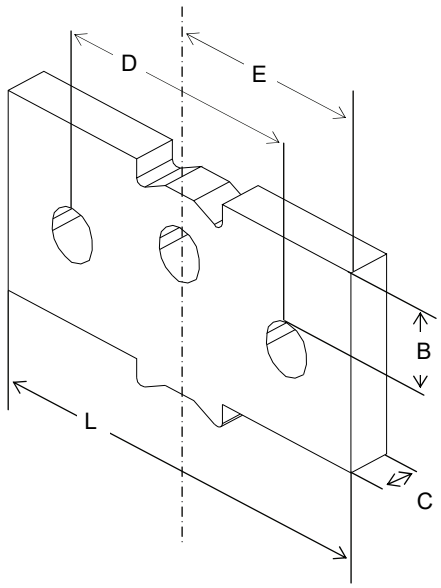
- The 4:1 safety factor is used with precast work and normally requires no increases except for cable magnification.
- Given full embedment, reinforcement, and a minimum compressive strength of 3,300 psi, the **4-5 ton Sandwich Panel Erection Anchors** should achieve a pullout strength equal to their Ultimate Mechanical Strength if reinforced with (2) #3 x2'-6" long bent.
- Given full embedment, reinforcement, and a minimum compressive strength of 4,500 psi, the **8-10 ton Sandwich Panel Erection Anchors** should achieve a pullout strength equal to their Ultimate Mechanical Strength if reinforced with (2) #5 x3'-6" long bent.
- The 2.66:1 safety factor, is a 2:1 safety factor, which is commonly used when back shipping, increased 33% to compensate for initial bond and impact. Additional increases due to unusual live loads or cable magnification may be required for some applications.

8 TON SANDWICH PANEL ERECTION ANCHOR							
PANEL THICKNESS	LEVELS	L	B	C	D	E	PART NUMBER
in.	in. x in. x in.	in.	in.	in.	in.	in.	#
8	3x2x3	6	3	3/4	3-3/4	3	SBSPEA346G
8	4x2x2	6	3	3/4	3-3/4	4	SBSPEA346G
9	3x3x3	7	3	3/4	5	3-3/4	SBSPEA347G
10	3x4x3	8-1/2	3	3/4	6	4-3/4	SBSPEA34812G
10	4x3x3 3x3x4	8-1/2	3	3/4	6	4-3/4	SBSPEA34812G
12	6x3x3 3x3x6	8-3/4	2-7/8	3/4	6-1/4	5-3/4	SBSPEA34834G



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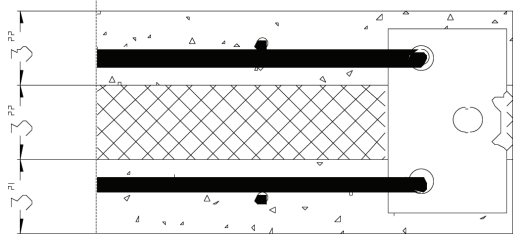

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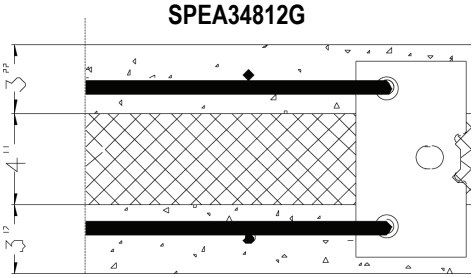

PANEL SANDWICH ANCHOR FOR 9" THICK PANELS (3"x 3"x 3")			
ANCHOR TONNAGE	TENSION 4:1 SF	SHEAR-PARALLEL TO THICKNESS 2.66:1	SHEAR-PERPENDICULAR TO THICKNESS 4:1 SF
tons	lb	lb	lb
8T	16,000	5,170	9,400

PANEL SANDWICH ANCHOR FOR 10" THICK PANELS (3"x 4"x 3")			
ANCHOR TONNAGE	TENSION 4:1 SF	SHEAR-PARALLEL TO THICKNESS 2.66:1	SHEAR-PERPENDICULAR TO THICKNESS 4:1 SF
tons	lb	lb	lb
8T	16,000	5,170	9,400

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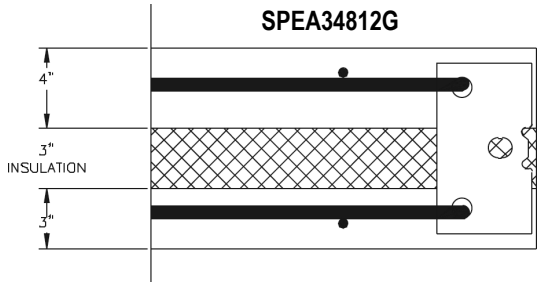

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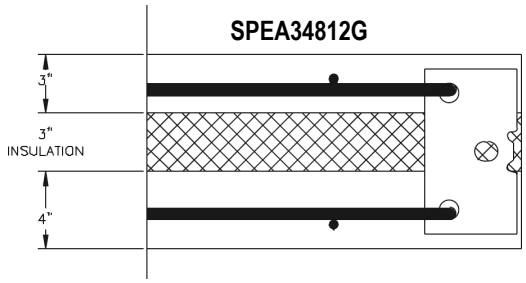

PANEL SANDWICH ANCHOR FOR 10" THICK PANELS (4"x 3"x 3")			
ANCHOR TONNAGE	TENSION 4:1 SF	SHEAR-PARALLEL TO THICKNESS 2.66:1	SHEAR-PERPENDICULAR TO THICKNESS 4:1 SF
tons	lb	lb	lb
8T	16,000	5,170	9,400

PANEL SANDWICH ANCHOR FOR 10" THICK PANELS (3"x 3"x 4")			
ANCHOR TONNAGE	TENSION 4:1 SF	SHEAR-PARALLEL TO THICKNESS 2.66:1	SHEAR-PERPENDICULAR TO THICKNESS 4:1 SF
tons	lb	lb	lb
8T	16,000	5,200	10,500

All specifications are subject to changes.

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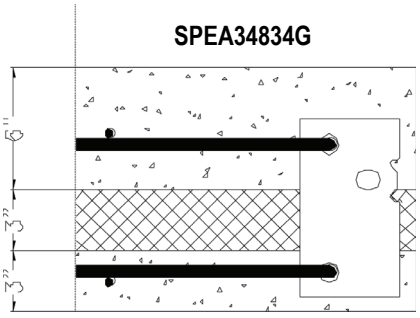

PANEL SANDWICH ANCHOR FOR 12" THICK PANELS (6"x 3"x 3")			
ANCHOR TONNAGE	TENSION 4:1 SF	SHEAR-PARALLEL TO THICKNESS 2.66:1	SHEAR-PERPENDICULAR TO THICKNESS 4:1 SF
tons	lb	lb	lb
8T	16,000	5,170	10,900

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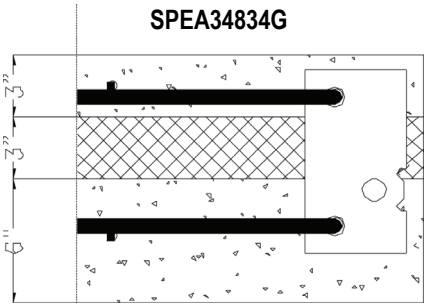

PANEL SANDWICH ANCHOR FOR 12" THICK PANELS (3"x 3"x 6")			
ANCHOR TONNAGE	TENSION 4:1 SF	SHEAR-PARALLEL TO THICKNESS 2.66:1	SHEAR-PERPENDICULAR TO THICKNESS 4:1 SF
tons	lb	lb	lb
8T	16,000	5,400	11,500

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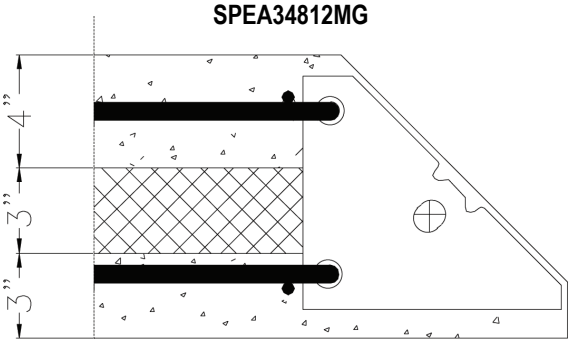

MITERED PANEL SANDWICH ANCHOR FOR 10" THICK PANELS (4"x 3"x 3")			
ANCHOR TONNAGE	TENSION 4:1 SF	SHEAR-PARALLEL TO THICKNESS 2.66:1	SHEAR-PERPENDICULAR TO THICKNESS 4:1 SF
tons	lb	lb	lb
8T	16,000	5,170	9,400

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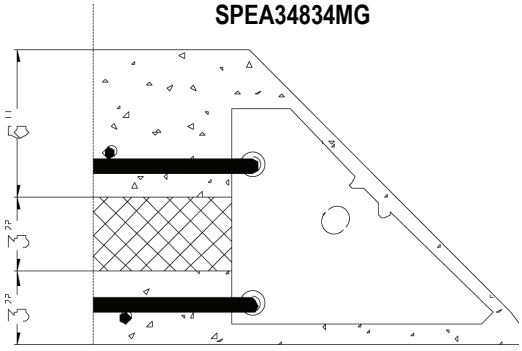
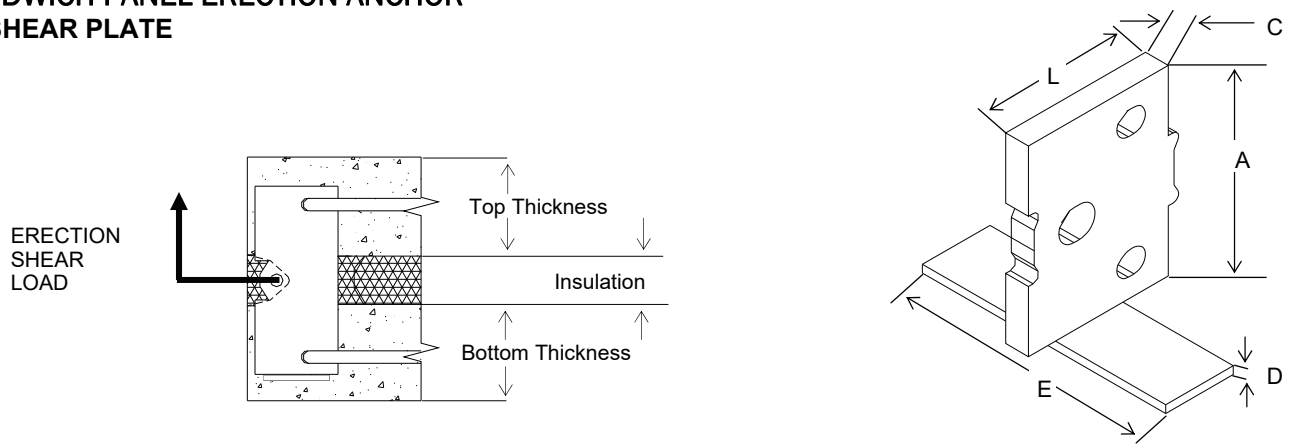


MITERED PANEL SANDWICH ANCHOR FOR 12" THICK PANELS (6"x 3"x 3")			
ANCHOR TONNAGE	TENSION 4:1 SF	SHEAR-PARALLEL TO THICKNESS 2.66:1	SHEAR-PERPENDICULAR TO THICKNESS 4:1 SF
tons	lb	lb	lb
8T	16,000	5,170	11,500

SANDWICH PANEL ERECTION ANCHOR
W/ SHEAR PLATE



SANDWICH PANEL ERECTION ANCHOR WITH SHEAR PLATE								
ANCHOR TONNAGE	CLUTCH ID	ANCHOR			PLATE		WEIGHT EACH	PART NUMBER
tons	#	HEIGHT (A)	LENGTH (L)	THICKNESS (C)	THICKNESS (D)	DIMENSIONS (E)	lb	#
4T	4-5T	6"	3-1/2"	5/8"	3/8"	3"x 3"	4.20	SBSPEA586SPG
5T	4-5T	6"	3-1/2"	5/8"	3/8"	3"x 3"	4.20	SBSPEA5865TSPG
8T	8-10T	6" *	3-3/4"	3/4"	3/8"	3"x 4"	6.55	SBSPEA346SPG
10T	8-10T	6" *	3-3/4"	3/4"	3/8"	3"x 4"	6.55	SBSPEA34610TSPG

5" Lengths Available

SANDWICH PANEL ANCHOR FOR 8" THICK PANEL (3"x 2"x 3")		
ANCHOR TONNAGE	ERECTION SHEAR (lb)	TENSION (lb)
4T	4,800	8,000
5T	4,800	10,000
8T	5,300	16,000
10T	5,300	20,000

SANDWICH PANEL ANCHOR FOR 9" THICK PANEL (3"x 3"x 3")		
ANCHOR TONNAGE	ERECTION SHEAR (lb) *2.66:1 SAFETY FACTOR*	TENSION (lb) *4:1 SAFETY FACTOR*
4T	5,100	8,000
5T	5,100	10,000
8T	5,700	16,000
10T	5,700	20,000

SANDWICH PANEL ANCHOR FOR 10" THICK PANEL (3.5"x 2"x 3.5")		
ANCHOR TONNAGE	ERECTION SHEAR (lb) 2.66:1 SAFETY FACTOR	TENSION (lb) 4:1 SAFETY FACTOR
4T	5.500	8,000
5T	5,500	10,000
8T	6,500	16,000
10T	6,500	20,000

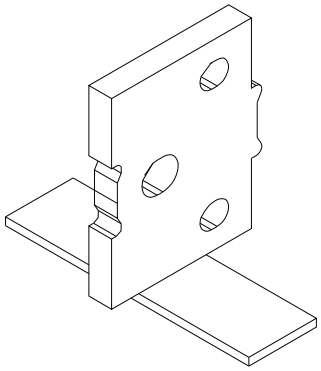
SANDWICH PANEL ANCHOR FOR 12" THICK PANEL (4"x 4"x 4")		
ANCHOR TONNAGE	ERECTION SHEAR (lb) *2.66:1 SAFETY FACTOR*	TENSION (lb) *4:1 SAFETY FACTOR*
4T	5,800	8,000
5T	5,800	10,000
8T	7,200	16,000
10T	7,200	20,000

- The 4:1 safety factor is used with precast work and normally requires no increases except for cable magnification.
- Given full embedment, reinforcement, and a minimum compressive strength of 3,300 psi, the **4-5 ton Sandwich Panel Erection Anchors** should achieve a pullout strength equal to their Ultimate Mechanical Strength if reinforced with (2) #3 x2'-6" long bent.
- Given full embedment, reinforcement, and a minimum compressive strength of 4,500 psi, the **8-10 ton Sandwich Panel Erection Anchors** should achieve a pullout strength equal to their Ultimate Mechanical Strength if reinforced with (2) #5 x3'-6" long bent.
- The 2.66:1 safety factor, is a 2:1 safety factor, which is commonly used when back shipping, increased 33% to compensate for initial bond and impact. Additional increases due to unusual live loads or cable magnification may be required for some applications.

MADE IN USA

All specifications are subject to changes.

8 TON SANDWICH PANEL ERECTION ANCHOR								
PANEL THICKNESS	LEVEL	L	A	B	C	D	E	PART NUMBER
in.	in. x in. x in.	in.	in.	in.	in.	in.	in.	#
8	3x2x3	6	4-3/4	3	3/4	3-3/4	3	SBSPEA346SPG
8	4x2x2	6	4-3/4	3	3/4	3-3/4	4	SBSPEA346SPG
9	3x3x3	7	4-3/4	3	3/4	5	3-3/4	SBSPEA347SPG
10	3x4x3	8-1/2	4-3/4	3	3/4	6	4-3/4	SBSPEA34812SPG
10	4x3x3	8-1/2	4-3/4	3	3/4	6	4-3/4	SBSPEA34812SPG
10	3x3x4	8-1/2	4-3/4	3	3/4	6	4-3/4	SBSPEA34812SPG
12	6x3x3	8-3/4	5	2-7/8	3/4	6-1/4	5-3/4	SBSPEA34834SPG
12	3x3x6	8-3/4	5	2-7/8	3/4	6-1/4	5-3/4	SBSPEA34834SP2G



MADE IN USA

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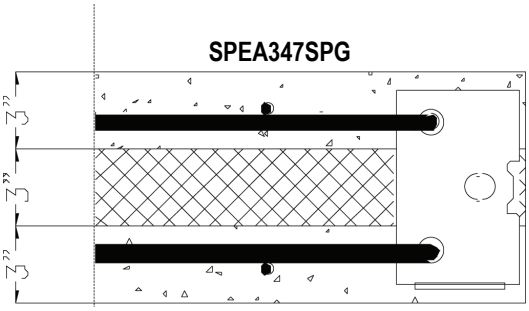

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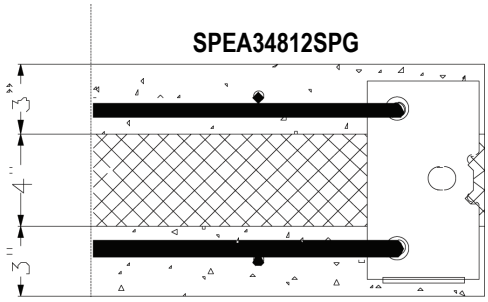
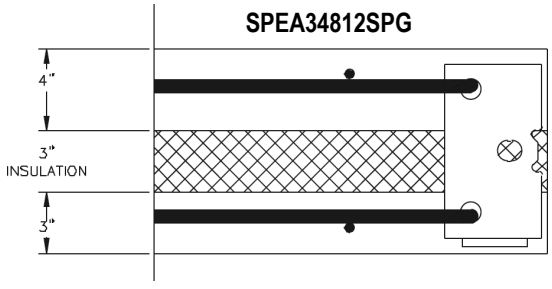


PANEL SANDWICH ANCHOR W/SHEAR PLATE FOR 9" THICK PANELS (3"x 3"x 3")			
ANCHOR TONNAGE	TENSION 4:1 SF	SHEAR-PARALLEL TO THICKNESS 2.66:1	SHEAR-PERPENDICULAR TO THICKNESS 4:1 SF
tons	lb	lb	lb
8T	16,000	5,700	9,400

PANEL SANDWICH ANCHOR W/SHEAR PLATE FOR 10" THICK PANELS (3"x 4"x 3")			
ANCHOR TONNAGE	TENSION 4:1 SF	SHEAR-PARALLEL TO THICKNESS 2.66:1	SHEAR-PERPENDICULAR TO THICKNESS 4:1 SF
tons	lb	lb	lb
8T	16,000	5,700	9,400

SPEA34812SPG



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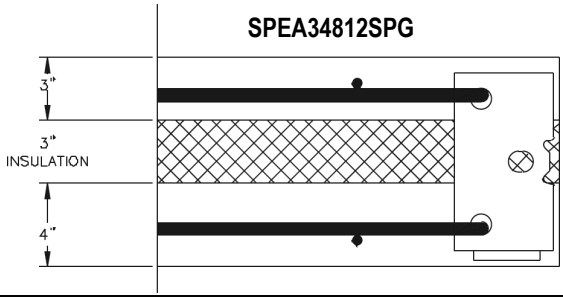
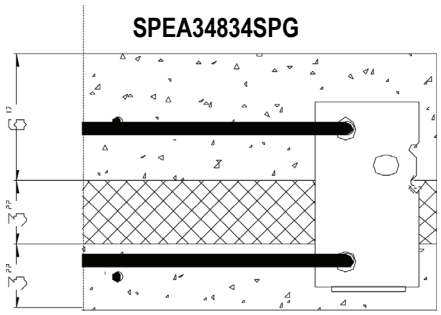


PANEL SANDWICH ANCHOR W/SHEAR PLATE FOR 10" THICK PANELS (4"x 3"x 3")			
ANCHOR TONNAGE	TENSION 4:1 SF	SHEAR-PARALLEL TO THICKNESS 2.66:1	SHEAR-PERPENDICULAR TO THICKNESS 4:1 SF
tons	lb	lb	lb
8T	16,000	5,700	10,500

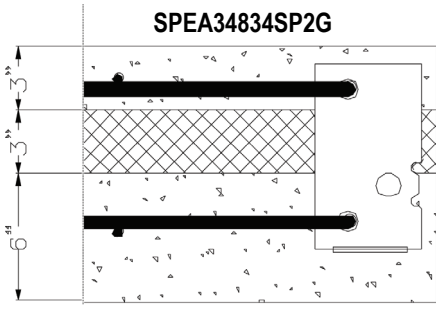
PANEL SANDWICH ANCHOR W/SHEAR PLATE FOR 10" THICK PANELS (3"x 3"x 4")			
ANCHOR TONNAGE	TENSION 4:1 SF	SHEAR-PARALLEL TO THICKNESS 2.66:1	SHEAR-PERPENDICULAR TO THICKNESS 4:1 SF
tons	lb	lb	lb
8T	16,000	5,700	10,500

SPEA34834SPG



PANEL SANDWICH ANCHOR W/SHEAR PLATE FOR 12" THICK PANELS (6"x 3"x 3")			
ANCHOR TONNAGE	TENSION 4:1 SF	SHEAR-PARALLEL TO THICKNESS 2.66:1	SHEAR-PERPENDICULAR TO THICKNESS 4:1 SF
tons	lb	lb	lb
8T	16,000	5,700	11,500

SPEA34834SP2G



PANEL SANDWICH ANCHOR W/SHEAR PLATE FOR 12" THICK PANELS (3"x 3"x 6")			
ANCHOR TONNAGE	TENSION 4:1 SF	SHEAR-PARALLEL TO THICKNESS 2.66:1	SHEAR-PERPENDICULAR TO THICKNESS 4:1 SF
tons	lb	lb	lb
8T	16,000	7,200	11,500

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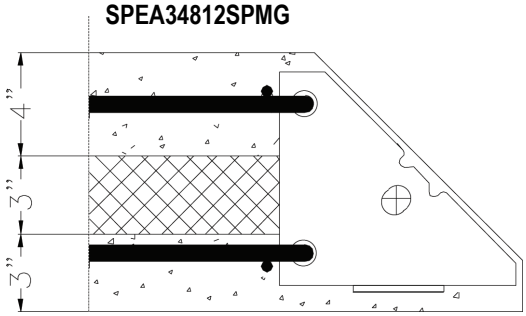
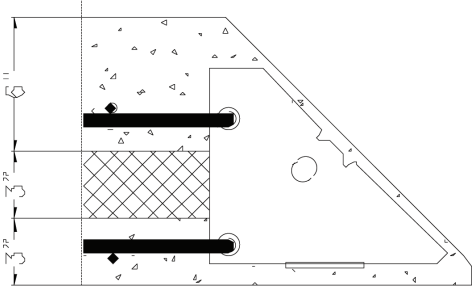


MITERED PANEL SANDWICH ANCHOR W/SHEAR PLATE FOR 10" THICK PANELS (4"x 3"x 3")			
ANCHOR TONNAGE	TENSION 4:1 SF	SHEAR-PARALLEL TO THICKNESS 2.66:1	SHEAR-PERPENDICULAR TO THICKNESS 4:1 SF
tons	lb	lb	lb
8T	16,000	5,400	9,400

SPEA34834SPMG

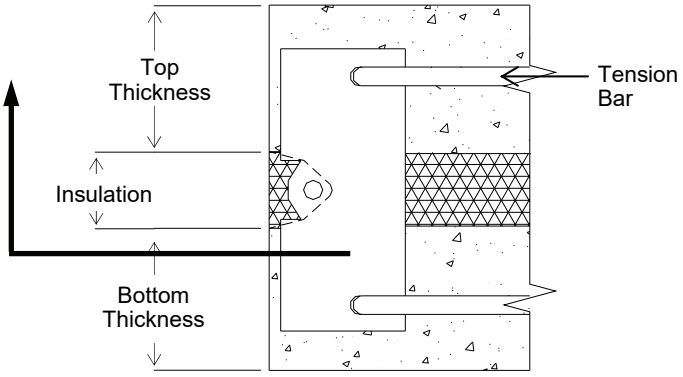


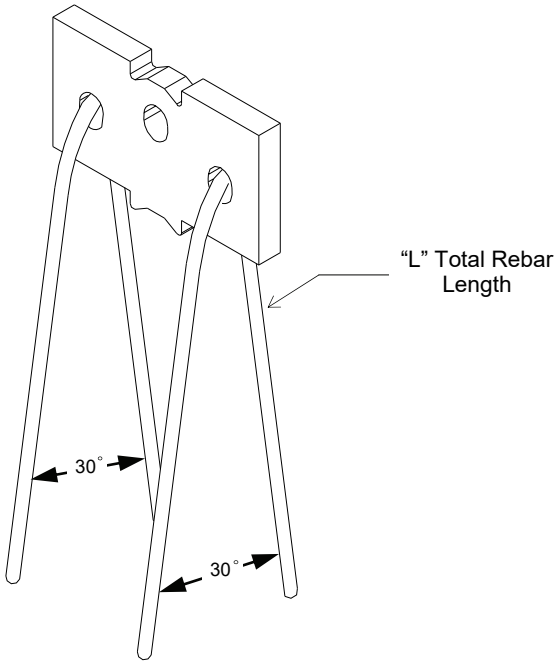
MITERED PANEL SANDWICH ANCHOR W/SHEAR PLATE FOR 12" THICK PANELS (6"x 3"x 3")			
ANCHOR TONNAGE	TENSION 4:1 SF	SHEAR-PARALLEL TO THICKNESS 2.66:1	SHEAR-PERPENDICULAR TO THICKNESS 4:1 SF
tons	lb	lb	lb
8T	16,000	5,400	9,400

All specifications are subject to changes.

SANDWICH PANEL TENSION BAR
For Sandwich Panel Erection Anchor

- Easy to use
- Cost efficient
- Distributes tension loads into the precast element
- Can be used with a variety of anchors





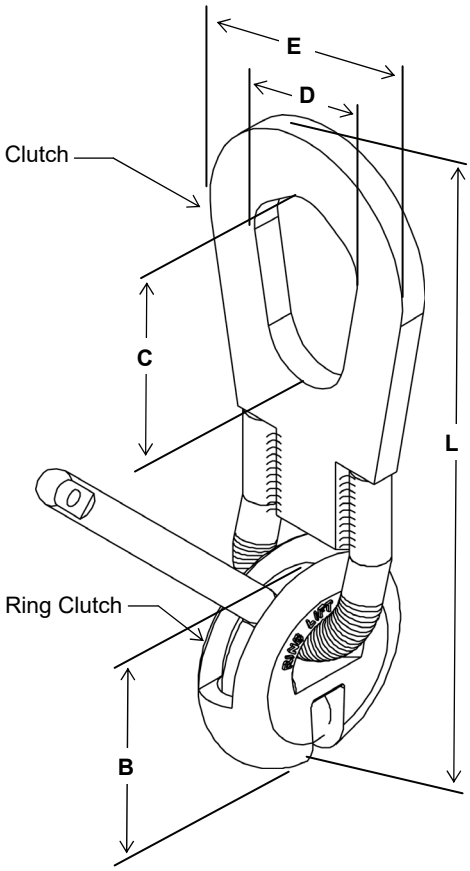
PLACEMENT OF
REINFORCEMENT BAR

SANDWICH PANEL ERECTION ANCHOR REINFORCEMENT								
ANCHOR TONNAGE	BOTTOM THICKNESS	INSULATION	TOP THICKNESS	MINIMUM PANEL THICKNESS	REBAR SIZE	REBAR LENGTH	BEND REQ. BOTTOM	BEND REQ.
tons	PANEL THICKNESS			in.	REINFORCEMENT REQUIRED			
4T	3"	2"	3"	8	#3	2'-6"	NO	NO
4T	4"	2"	2"	8	#3	2'-6"	NO	YES
4T	2"	2"	2"	6	#3	7'-0"	YES	YES
8T	3"	2"	3"	8	#5	3'-6"	NO	YES
8T	4"	2"	2"	8	#5	3'-6"	NO	YES

Based on 4:1 Safety Factor

RING LIFT
RING LIFTING HARDWARE

- Configured with a clutch body, a curved interlocking
- Bolt and a high strength bail
- Attach quickly and lift smoothly
- Clutch rotates to lock over protruding over the ring anchor head and recess into a closed position
- Standard bail rotates 180° for spall-free lifting
- Once in locking position and supporting the full load, the ring clutch cannot be released.
- Capacity based on a 5:1 Safety Factor

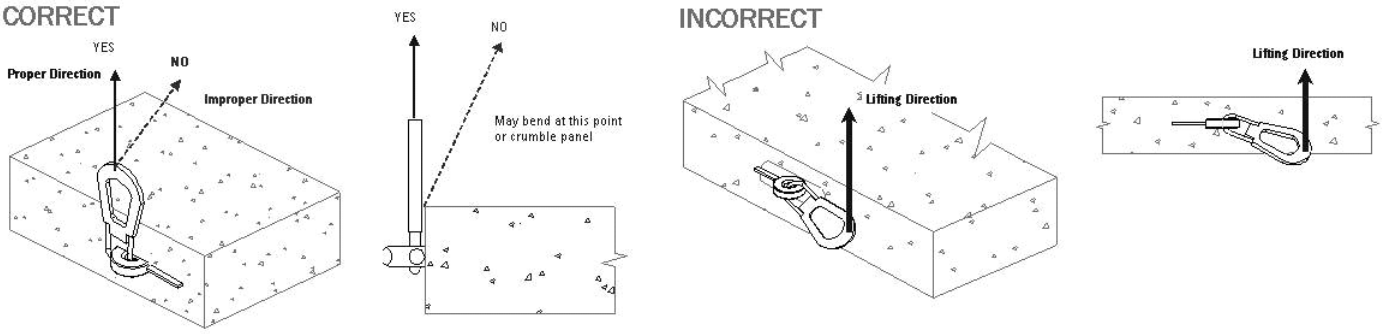


RING LIFT HARDWARE								
RING CLUTCH SYSTEM	CLUTCH ID ALLOWABLE LOAD RANGE	TOTAL LENGTH (L)	B	C	D	E	WEIGHT EACH	PART NUMBER
tons	#	in.	in.	in.	in.	in.	lb	#
2.5T	2-2.5T	10-15/16	3-1/8	3-1/16	2-5/32	3-3/4	4.60	**SBRL2.5T**
5T	3-5T	12-31/32	4-1/16	3-15/16	2-15/32	4-19/32	9.25	**SBRL5T**
10T	8-10T	17-3/8	5-7/8	5-1/4	3-3/8	6-11/32	22.80	**SBRL10T**

Before Use...

Locking Guide Lines

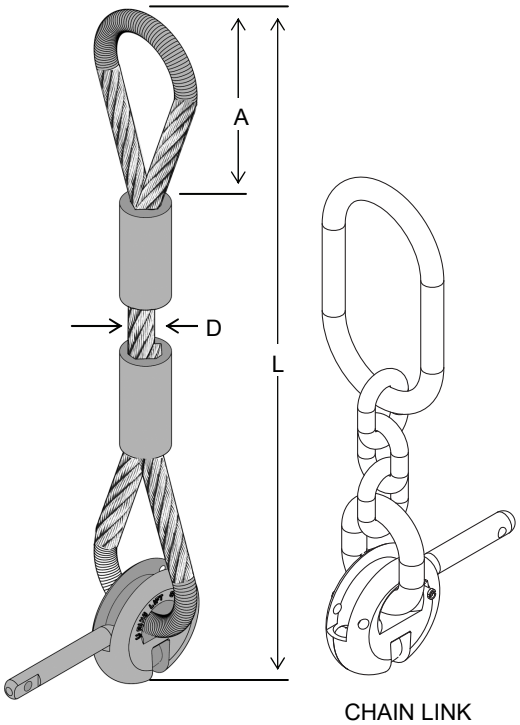
The bail, if positioned below the ring clutch, as shown, may lock itself in a position preventing free movement of the unit. In this position the bail might bend during lift. As the panel is lifted the clutch may bend. As the panel reaches a more vertical position the clutch will unlock itself resulting in an impact load.



All specifications are subject to changes.

RING LIFT
CABLE LIFTING HARDWARE

- For difficult rotate-to-vertical situations
- Bolt and high strength bail
- Attach quickly and lift smoothly
- Works like a Ring Lift Bail
- Once in locking position and supporting the full load the ring clutch cannot be released.
- Capacity based on a 5:1 Safety Factor
- Also available with chain link



CHAIN LINK VERSION

RING LIFT HARDWARE CABLE						
RING CLUTCH SYSTEM	CLUTCH ID ALLOWABLE LOAD RANGE	TOTAL LENGTH (L)	LOOP LENGTH (A)	CABLE DIAMETER (D)	WEIGHT EACH	PART NUMBER
tons	#	in.	in.	in.	lb	#
2.5T	2-2.5T	24-1/2	7	1/2	3.5	**SBCRL2.5T**
5T	4-5T	26-1/2	9	3/4	8.5	**SBCRL5T**
10T	8-10T	37-1/2	10-1/2	1	21.8	**SBCRL10T**

Before Use...

The users must establish a program for inspection of their Ring Cable Lifting Hardware based on their frequency of use.

1. Frequency of Inspection
   A. When receiving Ring Clutch from the manufacturer
   B. When receiving Ring Clutch from other sources

2. Inspection/Maintenance Requirements
   A. New Inventory
      a. Generally, inspect for overall appearance.
      b. Make sure there are no bent parts or spots or weld or evidence of excessive heating on any parts.
      c. Make sure clutch has stop pin.
      d. Make sure the handle does not come out of the casting when rotated to the open position.
   B. After every use inspect the wire rope for:
      a. Bends or kinks.
      b. Loosening of outer layers in the free length.
      c. Squeezings in the free length of the rope.
      d. Squeezings in the support area of the rope.
      e. Tuberculations
      f. Damage or extreme wear of the rope or end connectors.
      g. Wire ruptures.

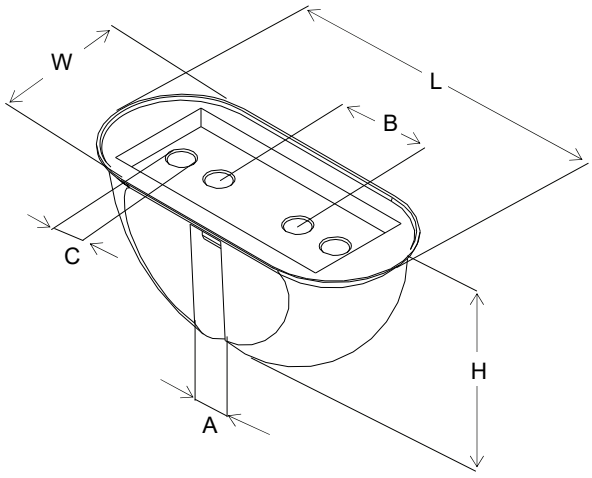
If the wire rope is damaged it must be replaced. The replacement should be of a similar or larger size hoisting rope of the same type as the original. It should be replaced, spliced, tested, and certified for load equal to 5 times the rated load stamped on the casting of the unit by a company specializing in this type of work. SureBuilt Manufacturing can arrange for wire rope replacement. Please contact SureBuilt Manufacturing customer service for information and cost.

RING LIFT RECESS FORMER

- Use with Ring Lift anchors and erection anchors
- Fast, accurate installation that forms consistent shape around the anchor for better lifter attachment
- Fastens to formwork
- Protects the anchor head from concrete
- Manufactured for reuse with durable urethane plastic

The Ring Lift Recess Former is used when a hole in the formwork is either impossible or undesirable. The holding plate fastens the recessing member and anchor to the formwork in one of four ways: nailing, screwing, welding, or taping. Four 3/16" diameter holes have been pierced at the corners of the holding plate for nailing.

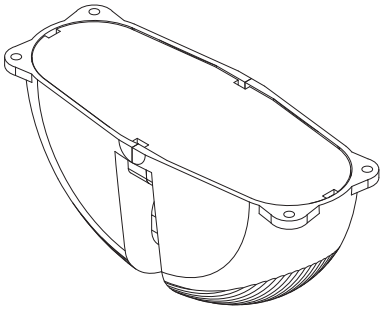
The recess member and anchor are attached to the mounting plate by sliding the recessing member over the two protruding pins on the plate. In addition to its fast, accurate installation, this assembly also allows easy stripping and multiple reuse.



RING LIFT RECESS FORMER									
RING CLUTCH SYSTEM	CLUTCH ID	LENGTH (L)	HEIGHT (H)	WIDTH (W)	SLOT WIDTH (A)	HOLE DISTANCE (B)	HOLE DIAMETER (C)	WEIGHT EACH	PART NUMBER
tons	#	in.	in.	in.	in.	in.	in.	lb	
1T	2.5T	3-3/4	1-15/16	1-11/16	3/16	1-1/16	0.406	0.20	**SBRLF1T**
2T-2.5T	2.5T	3-3/4	1-15/16	1-11/16	3/8	1-1/16	0.406	0.20	**SBRLF2T**
4T-5T	5T	4-7/8	2-1/4	2-3/16	5/8	1-3/8	0.406	0.44	**SBRLF5T**
8T-10T	10T	6-1/2	3-1/4	3-1/2	3/4	1-15/16	0.406	1.25	**SBRLF10T**

Each former has two connections; 1-COIL and 1-NC thread.

RING LIFT DISPOSABLE PLASTIC VOID FORMER			
RING CLUTCH SYSTEM	CLUTCH ID	COLOR	PART NUMBER
tons	#		#
2T-2.5T	2.5T	green	**SBRLDF2T**
4T-5T	5T	orange	**SBRLDF4T**
8T-10T	10T	blue	**SBRLDF8T**



MAGNET PLATES

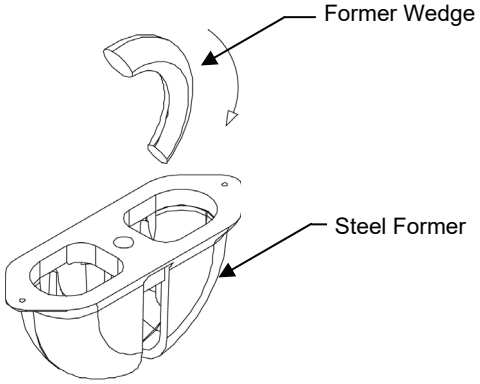
- The first reusable transport anchor system with integrated magnets.
- Anchor magnet securely holds the lifting device and is easily attached to any location on the side rail, can be quickly repositioned if necessary and after demolding, can be rapidly removed and reused.

MAGNET PLATES FOR RING LIFT FORMERS		
RING CLUTCH SYSTEM	WEIGHT EACH	PART NUMBER
tons	lb	#
2T-2.5T	1.40	**SBGB4049**
4T-5T	1.60	**SBGB4050**
8T-10T	3.00	**SBGB4051**

All specifications are subject to changes.

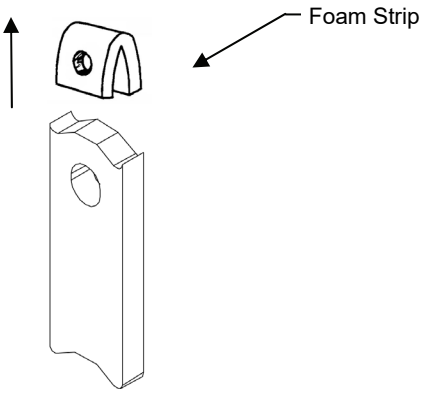
RING LIFT STEEL RECESS FORMER

- Use with Ring Lift anchors and erection anchors
- Fast, accurate installation that forms consistent shape around the anchor for better lifter attachment



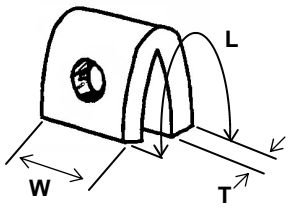
RING LIFT STEEL RECESS FORMER			
RING CLUTCH SYSTEM	CLUTCH ID	WEIGHT EACH	PART NUMBER
tons	#	lb	#
2T	2T	0.65	SBRLSFH2T
4T	5T	1.10	SBRLSFH4T
8T	10T	3.80	SBRLSFH8T

Used with steel former to lock in place.



RING LIFT STEEL FORMER WEDGE			
RING CLUTCH SYSTEM	CLUTCH ID	WEIGHT EACH	PART NUMBER
tons	#	lb	#
2T	2T	0.12	SBRLSFW2T
4T	5T	0.29	SBRLSFW4T
8T	10T	0.85	SBRLSFW8T

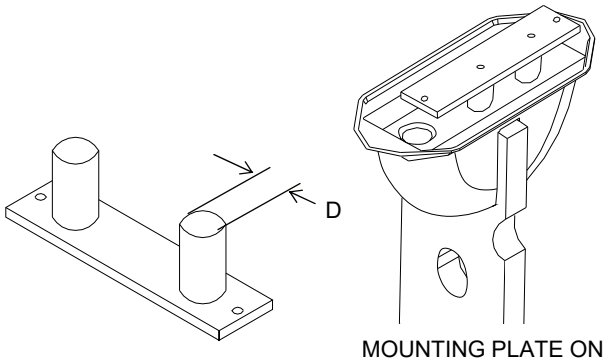
Used with steel former. Helps lock anchor securely into place.



RING LIFT FOAM STRIPS						
RING CLUTCH SYSTEM	CLUTCH ID	LENGTH (W)	WIDTH (W)	THICKNESS (T)	WEIGHT EACH	PART NUMBER
tons	#	in.	in.	in.	lb	#
2T	2.5T	3	2	0.25	0.75	SBRLFS2T
4T	5T	4	2-1/2	0.25	1.3	SBRLFS4T
8T	10T	6	3	0.72	3.7	SBRLFS8T

MOUNTING PLATE

- Two pins
- Allows for easy stripping and multiple reuse.

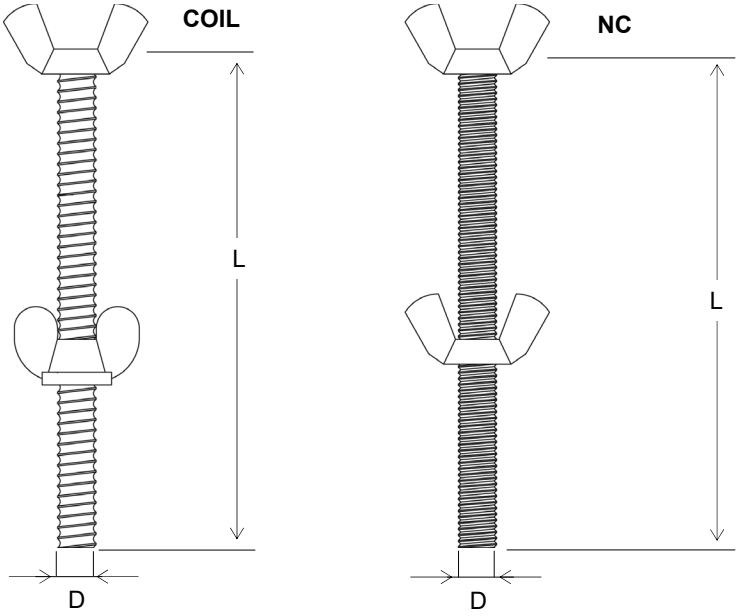


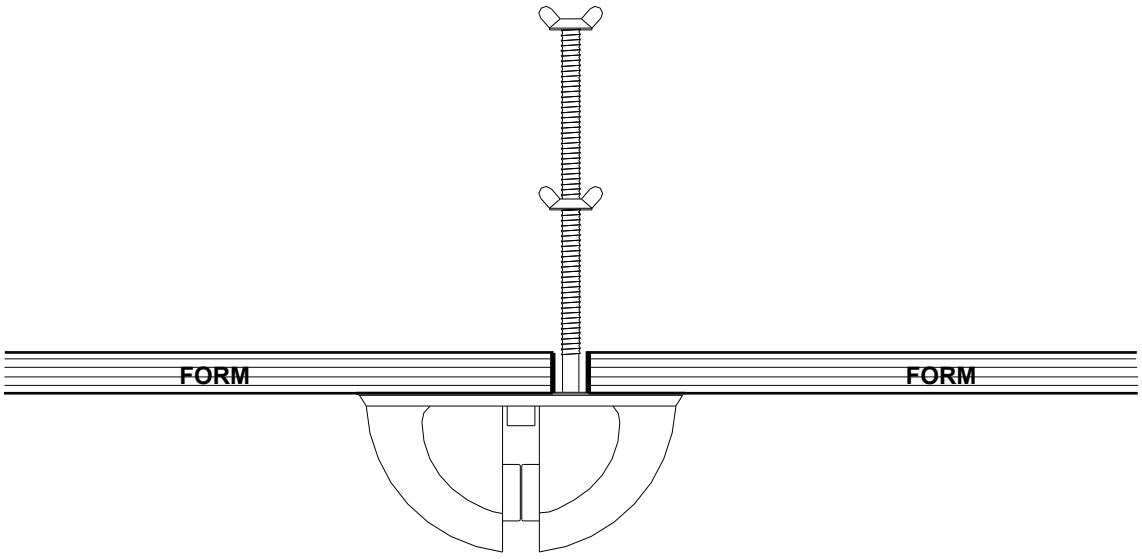
MOUNTING PLATE ON RECESS FORMER

MOUNTING PLATE				
RING CLUTCH SYSTEM	CLUTCH ID	DIAMETER	WEIGHT EACH	PART NUMBER
tons	#	in.	lb	#
2T	2.5T	0.406	0.085	SBRFFP12T
4T	5T	0.406	0.185	SBRFFP34T
8T	10T	0.406	0.250	SBRFFP68T

BOLT & WING NUT ASSEMBLY

- Used with Ring Lift Recess Member and Mounting Plate





BOLT & WING NUT ASSEMBLY							
CAPACITY	CLUTCH ID	LENGTH (L)	D-THREAD		WEIGHT EACH	PART NUMBER -NC	PART NUMBER-COIL
tons	#	in.	COIL	NC	lb	#	#
1T	2.5T	6-3/8"	3/8 "C	3/8" NC	0.195	SBAFR3863812TNC	SBAFR3863812TC
2T	2.5T	6-3/8"	3/8" C	3/8" NC	0.195		
4T	5T	6-3/8"	3/8" C	3/8" NC	0.195		
8T	10T	6-3/8"	1/2" C	1/2" NC	0.450	SBAFR12638810TNC	SBAFR12638810TC

All specifications are subject to changes.

NOTES:

UNI-LIFT SYSTEM

THE SUREBUILT UNI-LIFT SYSTEM includes:

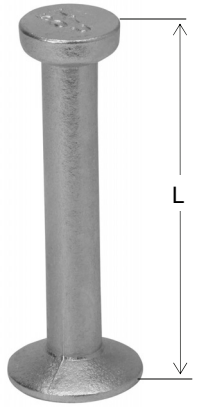
- **1 Lifting Hardware Device**
- **1 Anchor Insert**
- **Rubber Former**
- **Bolt and Wing Nut**
- **Shear Bar**

SUREBUILT offers it in a 1-25 Ton CAPACITY

PRODUCT INDEX

UNI-LIFT ANCHOR

- Manufactured from high quality steel
- Specially-formed enlarged head will fit most existing hardware
- Made from steel which remains ductile at low temperatures, making this anchor safe to use, even in freezing conditions
- Each anchor head is clearly marked for size
- Anchors are tested at a specified sampling rate (to failure) and examined for possible tolerance deviations



When using Uni-Lift Anchors in a face lift application, the capacity is determined by the full shear cone, the mechanical strength of the anchor, or in some cases, induced stresses.

The SWL values stated below apply regardless of the direction of loading. Loading may be perpendicular, horizontal, or any angle in between.

Note minimum corner distance. If anchors are spaced closely the minimum distance between anchors is 3 times the embedded depth of the anchor to prevent overlapping of shear cones.

UNI-LIFT ANCHORS SAFE WORKING LOADS

ANCHOR HEAD MARK	ANCHOR SIZE TON X LENGTH (T x in.)	SAFE WORKING LOADS IN NORMAL CONCRETE WEIGHT				PART NUMBER	RECESS FORMER SIZE	LIFTER SIZE
		1500 PSI	2500 PSI	3500 PSI	5000 PSI			
		lb	lb	lb	lb			
U1T	1 x 2-1/2	1,050	1,350	1,600	2,000	SBULA382.5G	1T	1-1.3T
	1 x 3-3/8	1,700	2,000	2,000	2,000	SBULA383.375G		
	1 x 4-3/4	2,000	2,000	2,000	2,000	SBULA384.75G		
U2T	2 x 2-3/16	950	1,250	1,500	1,800	SBULA9162.187G	1.5-2T	1.5-2.5T
	2 x 2-1/2	1,050	1,400	1,800	2,150	SBULA9162.5		
	2 x 2-3/4	1,300	1,750	2,200	2,750	SBULA9162.75		
	2 x 3-3/8	1,900	2,450	2,900	3,450	SBULA9163.375G		
	2 x 4-3/4	3,300	4,000	4,000	4,000	SBULA9164.75G		
	2 x 5-1/2	4,000	4,000	4,000	4,000	SBULA9165.5G		
	2 x 6-3/4	4,000	4,000	4,000	4,000	SBULA9166.75G		
	2 x 11	4,000	4,000	4,000	4,000	SBULA91611G		
U4T	4 x 3-3/4	2,500	3,300	3,900	4,700	SBULA343.75G	4T	3-5T
	4 x 4-1/4	3,100	4,000	4,750	5,700	SBULA344.25G		
	4 x 4-3/4	3,750	4,850	5,750	6,850	SBULA344.75G		
	4 x 5-1/2	4,700	6,000	7,200	8,000	SBULA345.5G		
	4 x 7-1/8	7,300	8,000	8,000	8,000	SBULA347.125G		
	4 x 9-1/2	8,000	8,000	8,000	8,000	SBULA349.5G		
	4 x 13-3/8	8,000	8,000	8,000	8,000	SBULA3413.375G		
U8T	8 x 4-3/4	4,050	5,250	6,200	7,450	SBULA1184.75G	8T	6-10T
	8 x 6-3/4	7,100	9,200	10,900	13,000	SBULA1186.75G		
	8 x 10	14,150	16,000	16,000	16,000	SBULA11810G		
	8 x 13-3/8	16,000	16,000	16,000	16,000	SBULA11813.375G		
U16T	16 x 10	15,300	19,500	23,400	27,950	SBULA1129.875G	20T	12-20T
	16 x 15-3/4	32,000	32,000	32,000	32,000	SBULA11215G		
	16 x 20	32,000	32,000	32,000	32,000	SBULA11219.625G		
U25T	25 x 9-7/8	16,650	21,500	25,450	30,425	SBULA211G	32T	25-32T
	25 x 19-5/8	50,000	50,000	50,000	50,000	SBULA220G		

Table is based on full shear cone developing in normal weight concrete.
Safe working loads provide an approximate 4:1 safety factor.

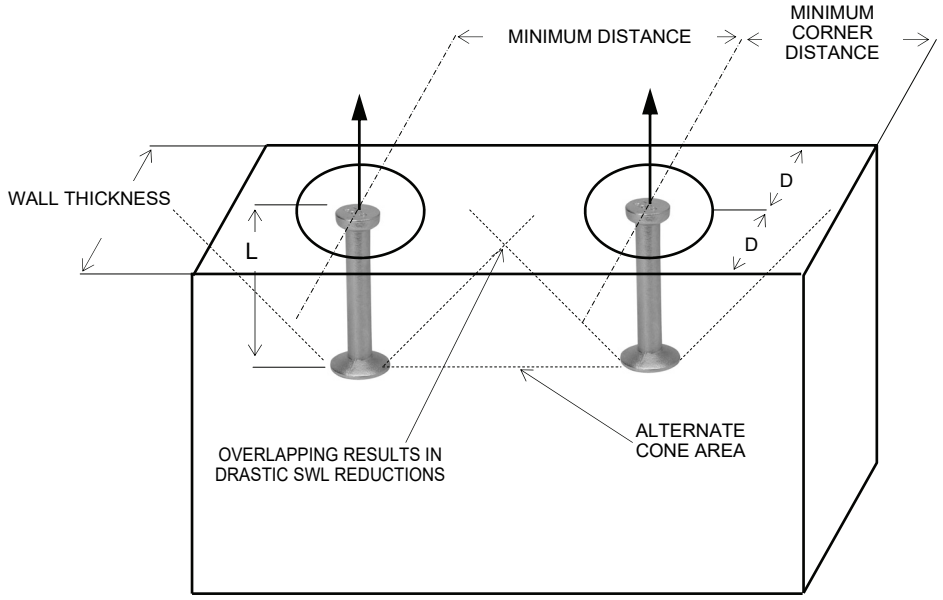
MADE IN USA

UNI-LIFT ANCHOR INSTALLATION NOTES

UNI-LIFT anchors in thin walls must be properly positioned so reduced capacities do not result.

- Anchors must be positioned in the centerline of the wall.
- Misalignment (off centerline) of the anchor foot may result in a drastic reduction of the safe working load.
- Use spacers and/or tie the anchor to rebar to assure proper positioning.

Safe working loads and minimum corner distances are shown in the following tables.



The Safe Working Load (SWL) tension shown on the following page are based on two or more anchors in thin walls where the spacing between anchors is less than 6 x L and the minimum corner distance is 3 x L (L= anchor length).

As with all other Uni-Lift anchors, the anchor must be located in the center of the wall and aligned on the centerline. Misalignment will cause a reduction in the safe work load due to the actual edge thickness being less than half the wall thickness. The critical wall thickness will be 2 x L and the SWL must be reduced to that wall thickness.

- When multiple anchors are used in thin walls, caution must be exercised to prevent anchor shear cone planes from overlapping.
- Using a spacing between anchors of 6L the shear cones will not overlap and maximum tensile capacities can be achieved as shown in the following tables. Proper positioning is extremely important. If anchor foot is not in center of wall the SWL must be reduced to the critical wall thickness.

All safe work loads shown in this section are based on 4500 psi (31 MPa) strength concrete. For use in lower strength concrete apply the following reduction factors.

Multiply the calculated values from the tables by the above reduction factors to arrive at the SWL for lower strength concrete.

Maximum strength developed in normal weight concrete.

1 TON TENSILE CAPACITY

ANCHOR TON & LENGTH	CRITICAL WALL THICKNESS	ACTUAL EDGE THICKNESS	TENSILE SAFE WORKING LOAD PER ANCHOR (lb)				
			ACTUAL CORNER DISTANCE				
	in.	in.	6 in.	12 in.	18 in.	24 in.	30 in.
1 Ton x 4-3/4"	2-1/2	1-1/4	1,000	1,200	1,300	1,300	1,300
	2-3/4	1-3/8	1,100	1,300	1,400	1,400	1,400
	3	1-1/2	1,200	1,400	1,600	1,600	1,600
	3-1/2	1-3/4	1,400	1,700	1,800	1,800	1,800
	4	2	1,600	1,900	2,000	2,000	2,000
	4-1/2	2-1/4	1,800	2,000	2,000	2,000	2,000

2 TON TENSILE CAPACITY

ANCHOR TON & LENGTH	CRITICAL WALL THICKNESS	ACTUAL EDGE THICKNESS	TENSILE SAFE WORKING LOAD PER ANCHOR (lb)				
			ACTUAL CORNER DISTANCE				
	in.	in.	8 in.	12 in.	18 in.	24 in.	30 in.
2 Ton x 6-3/4"	3	1-1/2	1,700	1,800	2,000	2,200	2,200
	3-1/4	1-5/8	1,900	2,000	2,200	2,400	2,400
	3-1/2	1-3/4	2,000	2,200	2,400	2,600	2,600
	4	2	2,300	2,500	2,700	3,000	3,000
	5	2-1/2	2,900	3,100	3,400	3,700	3,700
	6	3	3,500	3,700	4,000	4,000	4,000

4 TON TENSILE CAPACITY

ANCHOR TON & LENGTH	CRITICAL WALL THICKNESS	ACTUAL EDGE THICKNESS	TENSILE SAFE WORKING LOAD PER ANCHOR (lb)				
			ACTUAL CORNER DISTANCE				
	in.	in.	10 in.	15 in.	20 in.	24 in.	30 in.
4 Ton x 9-1/2"	3-3/4	1-7/8	2,900	3,200	3,400	3,500	3,800
	4	2	3,100	3,400	3,600	3,800	4,000
	5	2-1/2	3,800	4,300	4,600	4,800	5,100
	6	3	4,600	5,200	5,500	5,700	6,100
	7	3-1/2	5,400	6,000	6,400	6,700	7,200
	8	4	6,200	6,900	7,300	7,600	8,000

8 TON TENSILE CAPACITY

ANCHOR TON & LENGTH	CRITICAL WALL THICKNESS	ACTUAL EDGE THICKNESS	TENSILE SAFE WORKING LOAD PER ANCHOR (lb)				
			ACTUAL CORNER DISTANCE				
	in.	in.	10 in.	15 in.	20 in.	24 in.	30 in.
8 Ton x 6-3/4"	4-3/4	2-3/8	3,000	3,300	3,600	3,700	3,700
	5	2-1/2	3,200	3,500	3,800	3,900	3,900
	6	3	3,800	4,200	4,600	4,700	4,700
	7	3-1/2	4,500	4,900	5,400	5,500	5,500
	8	4	5,100	5,600	6,100	6,200	6,500
	10	5	6,300	6,900	7,500	7,700	7,700

All tables based on 4:1 Safety Factor in 4,500 psi concrete.

8 TON TENSILE CAPACITY							
ANCHOR TON & LENGTH	CRITICAL WALL THICKNESS	ACTUAL EDGE THICKNESS	TENSILE SAFE WORKING LOAD PER ANCHOR (lb)				
			ACTUAL CORNER DISTANCE				
	in.	in.	12 in.	18 in.	24 in.	36 in.	45 in.
8 Ton x 13-3/8"	5	2-1/2	4,500	5,500	5,900	6,500	7,000
	6	3	5,500	6,500	7,100	7,800	8,000
	7	3-1/2	6,500	7,600	8,300	9,100	10,000
	8	4	7,300	8,700	9,500	10,800	11,500
	10	5	9,100	11,000	12,000	13,500	14,000
	12	6	11,000	13,000	14,200	16,000	16,000

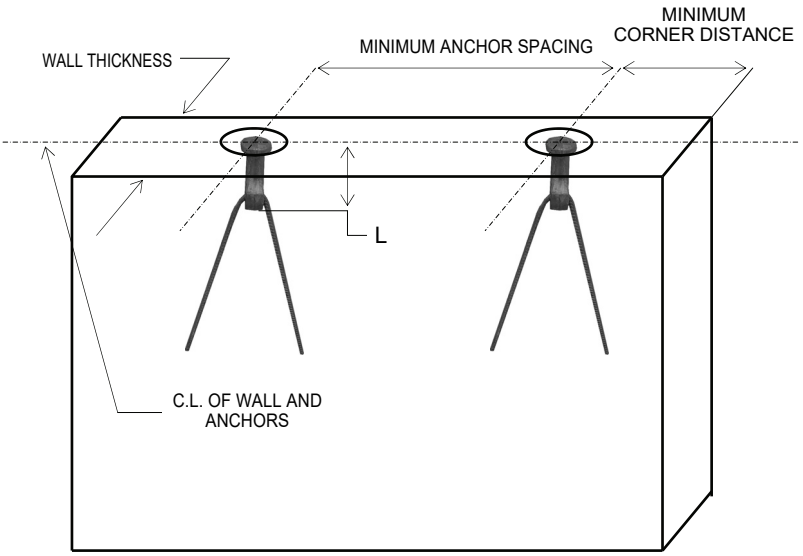
16 TON TENSILE CAPACITY							
ANCHOR TON & LENGTH	CRITICAL WALL THICKNESS	ACTUAL EDGE THICKNESS	TENSILE SAFE WORKING LOAD PER ANCHOR (lb)				
			ACTUAL CORNER DISTANCE				
	in.	in.	12 in.	18 in.	24 in.	36 in.	45 in.
16 Ton x 19-5/8"	6-1/2	3-1/4	7,000	9,000	10,500	11,500	12,200
	7	3-1/2	8,000	10,000	11,500	12,500	13,200
	8	4	9,200	11,200	13,000	14,400	15,100
	10	5	11,500	14,300	16,000	18,000	19,000
	12	6	14,000	17,300	20,000	21,500	22,800
	14	7	16,200	20,200	23,000	25,000	26,600

All tables based on 4:1 Safety Factor in 4,500 psi concrete.

UNI-EYE ANCHORS WITH REBAR

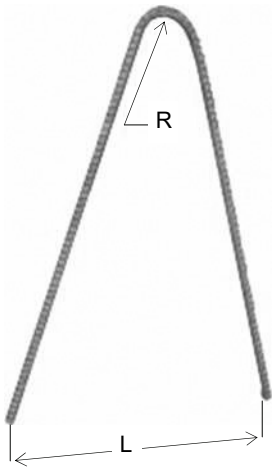
SureBuilt Uni-Eye Anchors with Rebar are used in conjunction with the rebar reinforcing bars. The bars are installed through the eye of the anchor to develop deep tensile action. This combination allows the anchors to develop great safe work loads when used in thin wall sections.

*Anchors must be centered when installed. Deviations will result in reduction of safe working loads



UNI-EYE ANCHORS WITH REBAR						
ANCHOR LOAD RATING	ANCHOR LENGTH (L)	MINIMUM PANEL THICKNESS	MINIMUM CORNER DISTANCE	SAFE WORK LOAD TENSION W/ REBAR	MINIMUM ANCHOR SPACING	PART NUMBER
tons	in.	in.	in.	lb	in.	#
1T	2-5/8	3	8	2,000	16	**SBULEA1TG**
2T	3-1/2	3	4	4,000	8	**SBULEA2TG**
4T	4-3/4	4	6	8,000	12	**SBULEA4TG**
8T	4-3/4	5	8	16,000	16	**SBULEA8T434G**
8T	7-1/8	5	8	16,000	16	**SBULEA8TG**
16T	9-7/8	6-1/2	10	32,000	18	**SBULEA16TG**
25T	12	7-7/8	12	50,000	24	**SBULEA25TG**

Based on 4:1 Safety Factor
Minimum concrete compressive strength f 'c = 2000 psi (14 Mpa). *Safe work loads shows are based on Anchors with rebar reinforcing installed.



REINFORCEMENT TENSION BAR				
ANCHOR LOAD RATING	REBAR GRADE 60 DIAMETER	REBAR OVERALL LENGTH	REBAR SPREAD (L)	REBAR BENDING RADIUS (R)
tons	Bar No.	in.	in.	in.
1T	#3	36	12	3/4
2T	#3	24	6	1-1/4
4T	#5	24	7	2
8T	#6	48	9	2-1/2
16T	#8	86	12	3
25T	#10	100	16	4

UNI-LIFT HARDWARE

Available with Bail and Chain

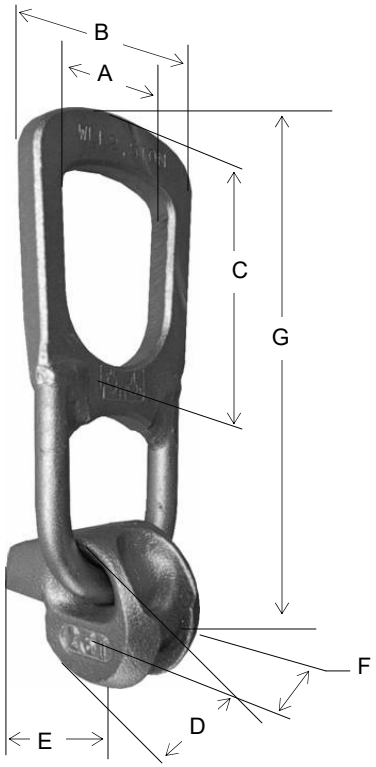
The Uni-Lift hardware is specially designed with a "T" shaped slot that hooks under the anchor head. The bail is a solid steel plate with a large hole to attach a cable clevis. The bail rotates from front to back in the lifting body. This action is an advantage over other existing systems as rigging does not need to be reversed when rotating a panel up and down.

Safety Note: Uni-Lift hardware clutch with bail or chains are proof loaded to 2.5x SWL and clearly stamped with a “CE” indicating proof test was performed. Uni-Lift hardware has approximate 5:1 safety factor.

SureBuilt Manufacturing recommends a regular inspection schedule to determine excess wear, damage, overloading, misuse, modified units or other factors which may affect a lifting unit's performance.

Under no circumstances should user modify, apply heat, weld or grind any part of the lifting hardware.

Note: Should damage occur, send the Uni-Lift Hardware Clutch back to SureBuilt Manufacturing for inspection or repair.



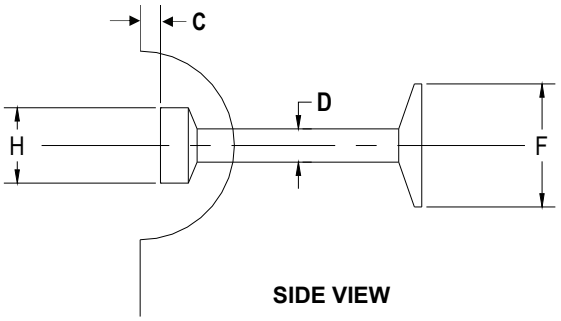
UNI-LIFT HARDWARE									
LIFTING BODY ID	SAFE WORK LOAD	A	B	C	D	E	F	G	PART NUMBER
tons	lb	in.	in.	in.	in.	in.	in.	in.	#
1-1.3 T	2,850	1.87	2.95	2.80	2.20	2.17	1.30	6.48	**SBUL1.3T**
2-2.5 T	5,500	2.52	3.86	3.35	2.68	2.76	1.65	8.09	**SBUL2.5T**
3.0-5.0 T	11,000	2.76	4.65	3.45	3.46	3.39	2.24	9.33	**SBUL5T**
6.0-10.0 T	22,000	3.74	10.24	4.76	4.41	4.61	2.87	13.72	**SBUL10T**
12.0-20.0 T	44,000	4.65	7.32	5.91	5.98	6.10	4.33	17.36	**SBUL20T**
25.0-32.0 T	70,000	6.89	10.59	7.44	7.68	8.43	6.02	22.99	**SBUL32T**

Based on 5:1 Safety Factor

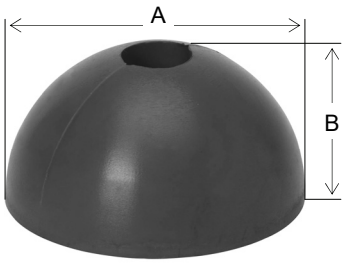
UNI-LIFT RECESS FORMER

WITH THREATED HOLE PLATE

This former has a threaded hole plate in the top center for installation of a removable threaded stud that can be removed before stripping of forms. Remove the threaded stud, lift concrete element from form (with stripping anchors) then remove recess former to expose anchor. Rubber former uses threaded stud with two wing nuts. Top wing nut is fixed and second wing nut is a running wing nut to tighten against form. The recess former rubber is black.



SIDE VIEW



RUBBER RECESS SIDE VIEW

RUBBER RECESS FORMER							
UNI-LIFT ANCHOR	ANCHOR SHANK DIAMETER (D)	ANCHOR HEAD DIAMETER (H)	ANCHOR FOOT DIAMETER (F)	COVER (C)	DIAMETER OF RECESS FORMER (A)	HEIGHT OF RECESS FORMER (B)	PART NUMBER
tons	in.	in.	in.	in.	in.	in.	#
1T	3/8	11/16	1	3/8	2-3/8	1-3/16	SBRRF1T
2T	9/16	31/32	1-3/8	7/16	3	1-9/16	SBRRF2T
4T	3/4	1-11/32	2	9/16	3-3/4	1-7/8	SBRRF4T
8T	1-1/8	1-7/8	2-3/4	9/16	4-3/4	2-5/16	SBRRF8T
16T	1-1/2	2-3/4	3-7/8	9/16	6-3/8	3-1/8	SBRRF16T
25T	2	3-15/32	5-5/16	9/16	8	4	SBRRF25T

UNI-LIFT RUBBER FORMER

WITH WING NUT

Rubber recess former with wing nut has a permanent threaded stud with one wing nut to tighten securely against form. Threaded stud is not removable and form must be stripped before anchor can be exposed. The recess former rubber is black.

ASSEMBLED RUBBER RECESS WITH WING NUT

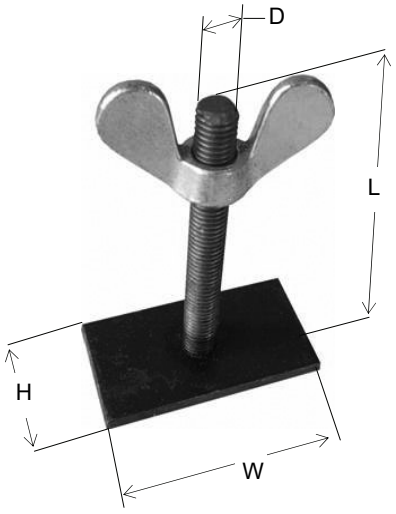
MAGNET FORMERS AND PLATES

STEEL UNI- LIFT FORMERS WITH MAGNET		
UNI-LIFT ANCHOR	WEIGHT EACH	PART NUMBER
tons	lb	#
2T	1.50	SBGB5011
4T	3.30	SBGB5012
8T	6.20	SBGB5014

MAGNET PLATES FOR UNI- LIFT FORMERS		
UNI-LIFT ANCHOR	WEIGHT EACH	PART NUMBER
tons	lb	#
2T	1.20	SBGB5011
4T	1.85	SBGB5012
8T	2.85	SBGB5014

THREADED BOLT & WING NUT ASSEMBLY W/ PLATE

Supplied as part of rubber former with permanent threaded stud. Available as a replacement part. Made with NC threads and welded to plate at bottom of stud.

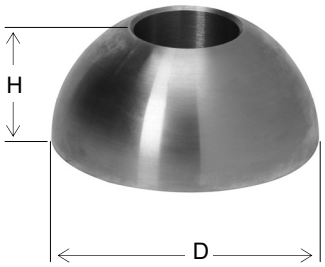


BOLT & WINGNUT ASSEMBLY WITH PLATE						
UNI-LIFT ANCHOR	CLUTCH ID	LENGTH (W)	BOLT DIAMETER (D)	PLATE WIDTH (W)	PLATE HEIGHT (H)	PART NUMBER
tons	tons	in.	in.	in.	in.	#
1T	1.3T	6-3/8	5/16-18NC	1.187	0.500	**SBFP1TWN**
2T	2.5T	6-3/8	5/16-18NC	1.500	0.781	**SBFP2TWN**
4T	5T	6-3/8	5/16-18NC	1.875	1.000	**SBFP4TWN**
8T	10T	6-3/8	3/8-16NC	2.343	1.187	**SBFP8TWN**
16T	15-20T	6-3/8	1/2-13NC	3.031	1.562	**SBFP16TWN**
25T	32T	6-3/8	5/8-11NC	3.031	1.562	**SBFP25TWN**

FORMER PLATES				
UNI-LIFT ANCHOR	CLUTCH ID	ROD DIAMETER	WEIGHT	PART NUMBER
tons	tons	in.	lb	#
1T	1.3T	5/16-18NC	0.05	**SBUFFP1T**
2T	2.5T	5/16-18NC	0.07	**SBUFFP2T**
4T	5T	5/16-18NC	0.10	**SBUFFP4T**
8T	10T	3/8-16NC	0.15	**SBUFFP8T**
16T	15-20T	1/2-13NC	0.20	**SBUFFP16T**
25T	32T	5/8-11NC	0.25	**SBUFFP25T**

STEEL RECESS FORMER

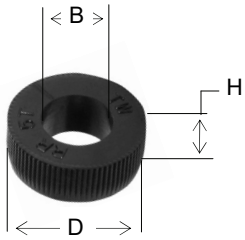
The steel recess former is for repetitive work with steel forms. Easy to install and strip after concrete product has been removed from the steel form. A single threaded hole in the top center is used to secure former to the steel form face.



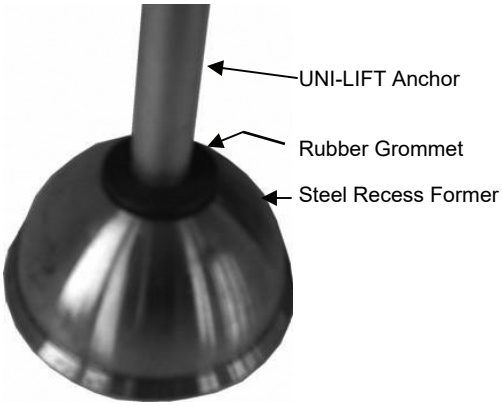
STEEL RECESS FORMER			
UNI-LIFT ANCHOR	D	H	PART NUMBER
	in.	in.	#
1T	2-3/8	1-3/16	**SBSF1T**
2T	3	1-7/16	**SBSF2T**
4T	3-3/4	1-13/16	**SBSF4T**
8T	4-3/4	2-5/16	**SBSF8T**

RUBBER GROMMET

A rubber grommet is used with a steel recess former and anchor to hold the anchor in the steel former and prevent concrete leakage into anchor head area.



RUBBER GROMMET				
UNI-LIFT ANCHOR	D	H	B	PART NUMBER
	in.	in.	in.	#
1T	0.812	0.468	0.437	**SBRR1T**
2T	1.187	0.468	0.593	**SBRR2T**
4T	1.500	0.625	0.812	**SBRR4T**
8T	1.812	0.625	1.125	**SBRR8T**

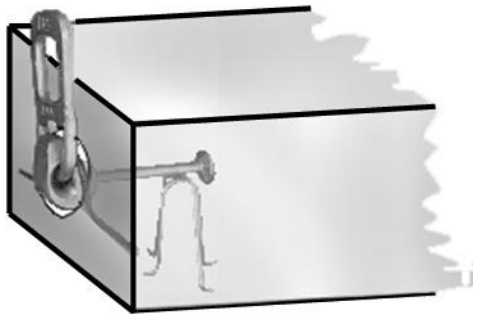


INSTALLATION: Position the rubber grommet over anchor shaft under the head. Slide anchor and grommet into opening in bottom of steel recess former. Secure anchor by tying to rebar steel.

All specifications are subject to changes.

EDGE LIFTING SHEAR BARS

When lifting a panel with an anchor cast in the panel edge from horizontal to vertical, special shear bars must be used. Without shear bars the load will likely bend the anchor head, allowing the lifter to directly apply the load to the concrete above the anchor, which is very weak. The shear bars, when properly installed, transfer a portion of the shear load back into the anchor and lower concrete area.

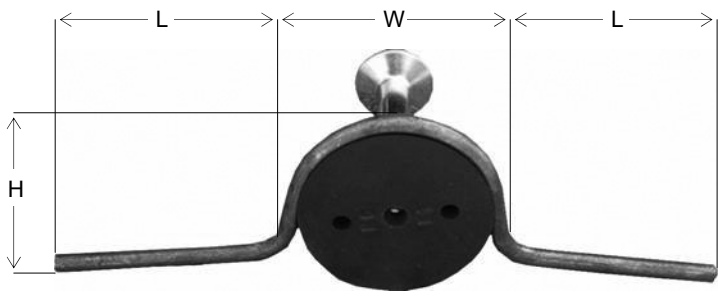


EDGE LIFTING SHEAR BAR					
UNI-LIFT ANCHOR	SLAB THICKNESS	LENGTH (L)	WIDTH (W)	HEIGHT (H)	FORMED WIRE DIA. (D)
tons	in.	in.	in.	in.	in.
1T	5	8	2-3/8	3-11/16	.375
2T	5	8	3	4	.375
2T	6	10	3	4-1/2	.375
4T	7-1/2	12	3-3/4	5-5/8	.375
6T	7-1/2	12	4-3/4	6-1/8	.375
8T	10	14	4-3/4	7-3/8	.375

Based on 4:1 Safety Factor

EDGE LIFTING SHEAR BAR LOAD TABLE					
UNI-LIFT ANCHOR	MIN. ANCHOR LENGTH	MIN. WALL THICKNESS	TOP EDGE DISTANCE	MIN. CORNER DISTANCE	SHEAR SWL 4:1 SAFETY FACTOR
tons	in.	in.	in.	in.	lb
2T	6-3/4	4	2-1/2	18	3,000
	6-3/4	5	3	24	3,200
	6-3/4	6	3-1/2	24	3,500
4T	9-1/2	6	3-1/2	24	3,500
	9-1/2	7	4	24	4,000
8T	13-3/8	7	4	24	4,500
	13-3/8	8	4-1/2	24	5,000

Based on 4:1 Safety Factor in 4,000 psi concrete.



UTILITY ANCHORS

PRODUCT INDEX

EASY LIFT® UTILITY ANCHOR

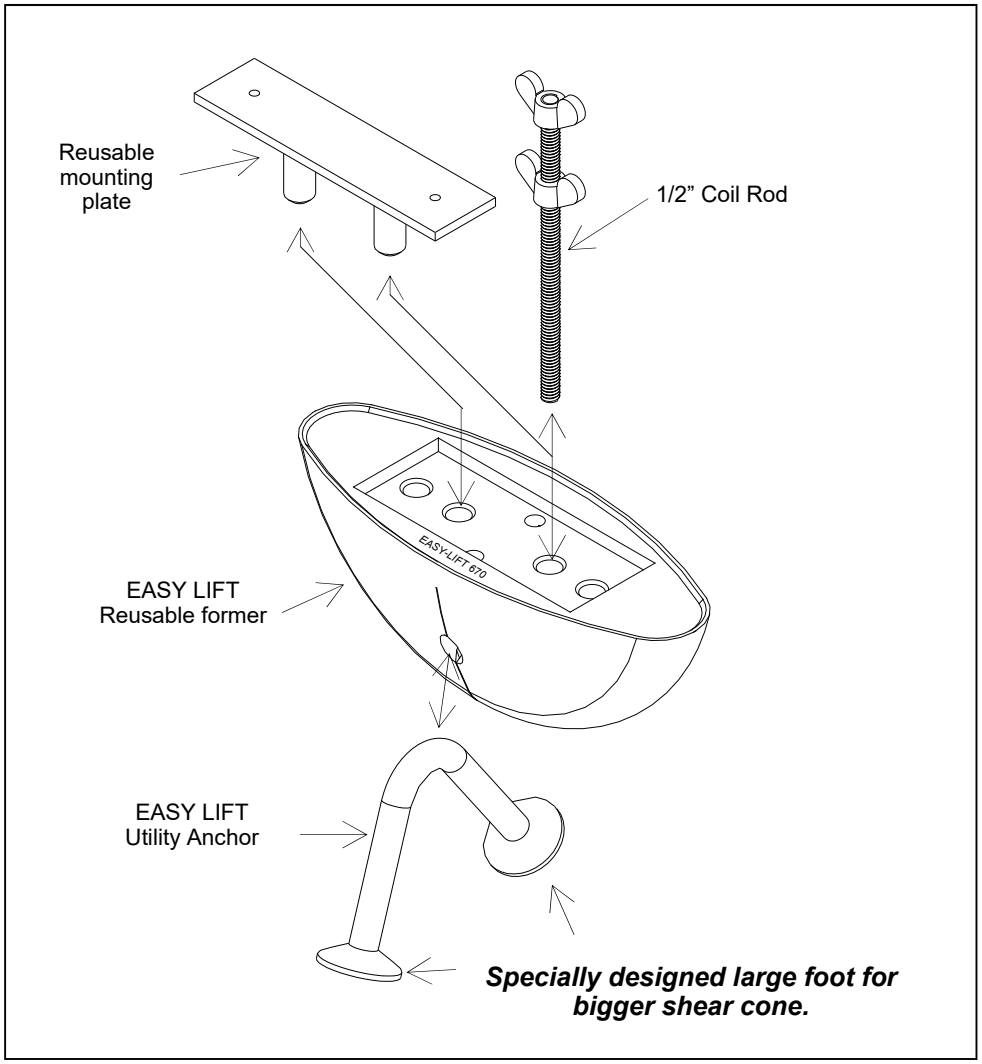
- Economical alternative for stripping, handling, and setting panels
- Versatile system - applicable to any precast element, can be used as pulling iron or lifting and pulling iron.
- High strength - Up to 6 Tons (12,000 lb) Tension SWL with an approximate 4:1 safety factor.
- Easy to install and use. Utilizes reusable rubber recess former - one size plug fits all anchor sizes.
- Used with a standard hook or clevis - no special lifting hardware required.
- Eliminates “through holes” in the precast element.

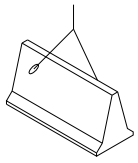
Caution: It is recommended when installing anchors to align recess formers with intended loading direction of cables (see drawings below).

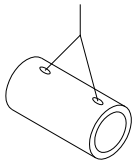
The Easy Lift Anchor Lifting System is designed to economically simplify the lifting and handling of precast concrete elements. Its economics, ease of use and versatility will be a welcome addition to your precast operations.

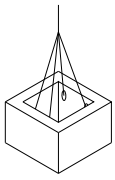
The Easy Lift can be utilized for removing the precast elements from their forms, handling the elements in the precast yard, loading for shipment and unloading and placement at the job site - all without any special lifting equipment or hardware. Use a standard hook or clevis to connect to the Utility Anchor for a safe lift.

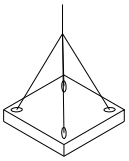
An added benefit of the easy to use system is a design feature that enables the unit to be used effectively as a pulling iron.

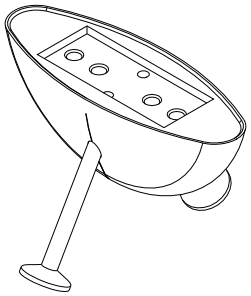


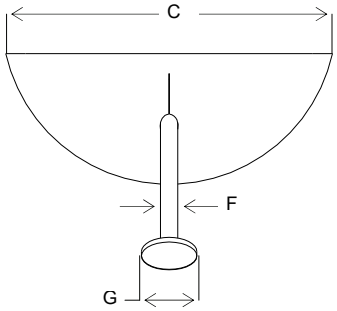

Barriers

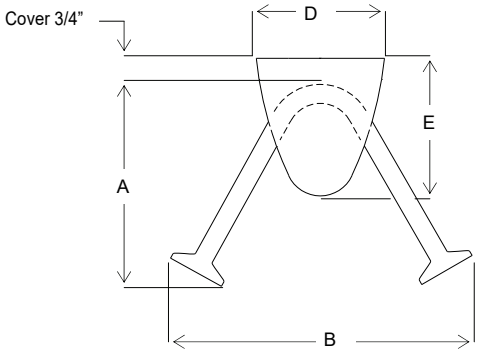

Pipe


Boxes


Slabs

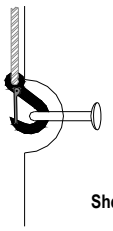




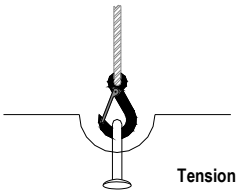


EASY LIFT ANCHOR

PART NUMBER	SLAB THICKNESS	A	B	F	G
#	in.	in.	in.	in.	in.
SBUA450318G	4	3.125	5.281	0.450	1.375
SBUA450334G	4-1/2	3.750	6.000	0.450	1.375
SBUA450434G	5-1/2	4.750	7.122	0.450	1.375
SBUA450634G	8	6.750	9.375	0.450	1.375
SBUEL4G	4	3.125	5.300	0.670	1.340
SBUEL412G	4-1/2	3.750	6.800	0.670	1.340
SBUEL512G	5-1/2	4.750	7.400	0.670	1.340
SBUEL8G	8	6.750	10.000	0.670	1.340



Shear Load



Tension Load

Note: When the Easy Lift is used as a pulling iron, the SWL can be increased by 33%.

LOAD CHART FOR EASY LIFT

PART NUMBER	SWL SHEAR LOAD (lb)	SWL TENSION LOAD (lb)
SBUA450318G	1,800	1,200
SBUA450334G	6,500	3,000
SBUA450434G	8,000	4,000
SBUA450634G	9,000	5,000
SBUEL4G	2,500	2,000
SBUEL412G	7,500	4,800
SBUEL512G	10,000	7,200
SBUEL8G	13,500	12,000

EASY LIFT FORMERS

PART NUMBER	C	D	E
#	in.	in.	in.
SBUAF450	8.000	3.000	3.250
SBELF670L	10.000	3.000	3.250

- Working load is based on 4:1 safety factor of the anchor and on minimum 4000 psi normal weight concrete
- For angle load use angle load factors (page 10)
- For concrete strength adjustment use multiply factors (page 10)
- Minimum edge distance: 2 x A in any directions

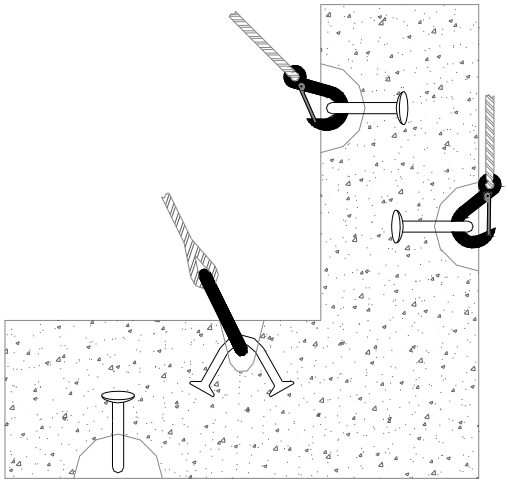
MADE IN USA

All specifications are subject to changes.

EASY LIFT®ANCHOR PLACEMENT

Placement of the Easy Lift anchor is dependent on the structural shape of the precast unit and/or the precast manufacturer's preference.

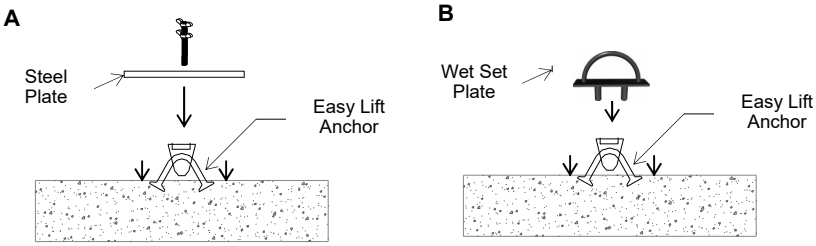
The anchors are not designed for thin edge installations. Always maintain minimum edge distances and adjust anchor capacities if concrete strengths other than those noted in the capacity chart are encountered.



Typical Installations:

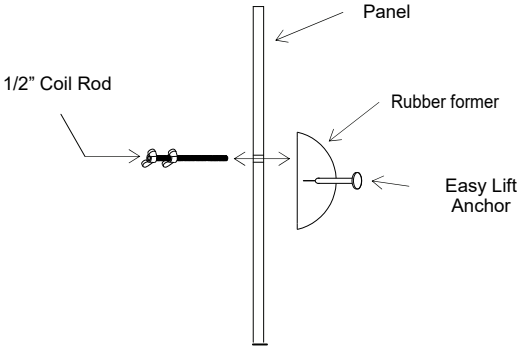
WET-SETTING

1. Assemble Easy Lift anchor with steel plate and nut and bolt assembly OR
   Assemble Easy Lift anchor with wet-set plate inserted into holes.
2. Use duct tape to seal cavities in the setting plug.
3. Work the assembly down into the wet concrete until the top surface of the plug is flush with the surface of the concrete or use floating plate.



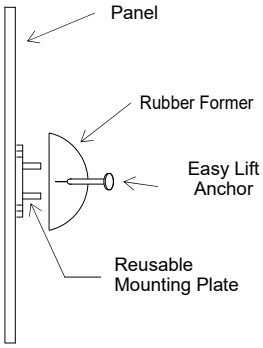
THRU-FORM SETTING

1. Assemble recess former and Easy Lift anchor.
2. Insert holding coil rod through panel and line up former.
3. Finger tighten the holding rod and lock in place with the corresponding wing nut.



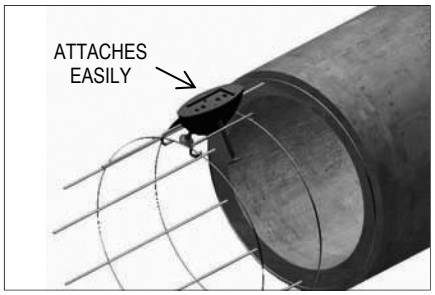
IN-FORM SETTING

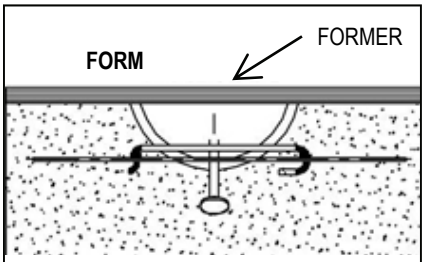
1. Assemble recess former and Easy Lift anchor.
2. Affix reusable mounting plate (nail, weld or double-sided tape) to form.
3. Push former onto the holding plate firmly against the panel.



EASY LIFT SYSTEM
UTILITY ANCHOR WITH SNAP WIRES

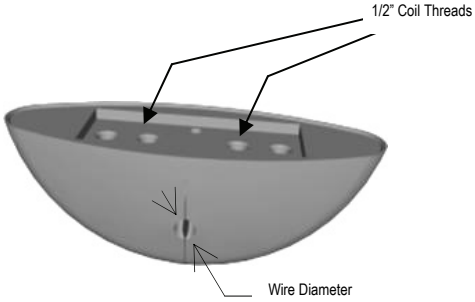
- Patent pending design
- Easily attaches to concrete mesh for side or vertical mounting
- Ideal for handling concrete pipes
- Available in .670 or .450 wire diameter
- Use with Easy Lift 670 green or 450 orange rubber former
- An approximate 4:1 safety factor





Cross Section View

EASYLIFT WITH SNAP WIRES	
WIRE DIAMETER	**ANCHOR TYPE**
4.50	**UA**
6.70	**UEL**
Anchors are available with snap wire in different wire sizes and specifications. Please, call you SureBuilt representative for details.	
Provides a Safety Factor of 4:1	

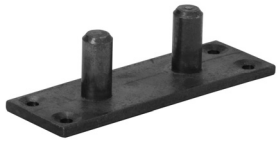


EASY LIFT ANCHOR FORMERS			
PART NUMBER	**ANCHOR WIRE DIAMETER**	**RUBBER COLOR**	**WEIGHT**
#	**in.**		**lb**
SBUAF450	0.450	Orange	1.42
SBUELF670	0.670	Green	1.83
SBELF670L	0.670	Black	2.00

Former, bolts and plates sold separately.

EASY LIFT MAGNET PLATES			
TYPE	**PART NUMBER**	**LENGTH**	**WEIGHT**
	#	**in.**	**lb**
450/670/670L Steel	**SBGB4055**	10	3.33

Compatible with all formers.



REUSABLE FORMER MOUNTING PLATE	
PART NUMBER	**WEIGHT**
#	**lb**
SBRFFP68T	0.25

All specifications are subject to changes.

EASY LIFT ACCESSORIES

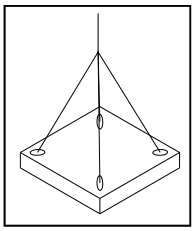
COIL ROD ASSEMBLY			
PART NUMBER	DIAMETER (D)	WEIGHT	LENGTH
#	in.	lbs.	in.
SBAFR12638810TC	1/2	0.43	6-3/8"

Used with rubber former with threaded hole. Two wing nuts are included.

EASY LIFT WET-SET PLATE	
PART NUMBER	WEIGHT
#	lb
SBWRFFP68T	0.80

EASY LIFT PLASTIC COVER	
PART NUMBER	WEIGHT
#	lb
SBELPC	0.115

EASY LIFT LIFTING SYSTEM
EASY LIFT 500 ANCHOR

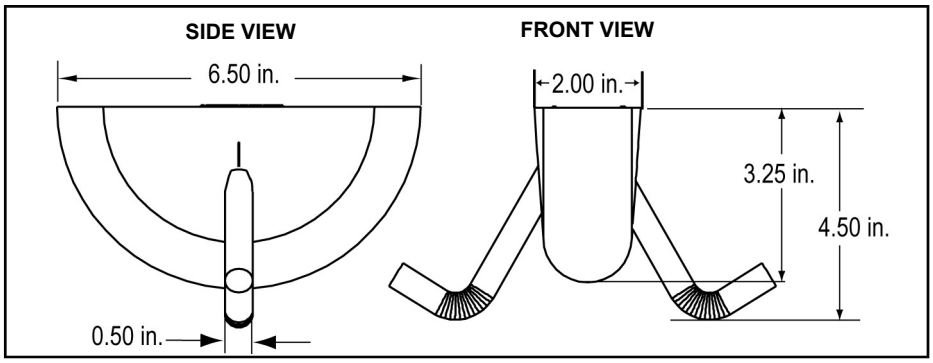


Designed for flat surfaces

Features
- High strength and quality
- Manufactured with premium materials
- Approximate 4:1 safety factor
- Compatible with re-usable Easy Lift 500 Former

Benefits
- Can be placed in panels with thickness of 5” and up
- Galvanized finish for better weather protection
- Leaves a small 2” wide void, no patching necessary
- Can be used with standard hook or clevis

Applications
- Ideal for flat surfaces (such as railroad crossings)
- Suitable for wet-setting and through-form setting



EASY LIFT 500 ANCHOR
Safe Working Load Table

PSI	2,500	3,500	4,500	5,000
SWL (lb)	2,600	3,300	4,000	4,200

Safe Working Load based on a 4:1 Safety Factor

EASY LIFT ANCHOR 500

PART NUMBER	ANCHOR WIRE DIAMETER	WIDTH	LENGTH	WEIGHT
#	in.	in.	in.	lb
SBELA500-300	0.50	3.00	4.50	0.6

Material: High Grade Galvanized Steel

RE-USABLE 500 FORMER

PART NUMBER	ANCHOR WIRE DIAMETER	RUBBER COLOR	WIDTH	LENGTH	WEIGHT
#	in.		in.	in.	lb
SBUELF500	0.50	BLUE	2.0	6.5	1.2

Material: High Grade Rubber.

MADE IN USA

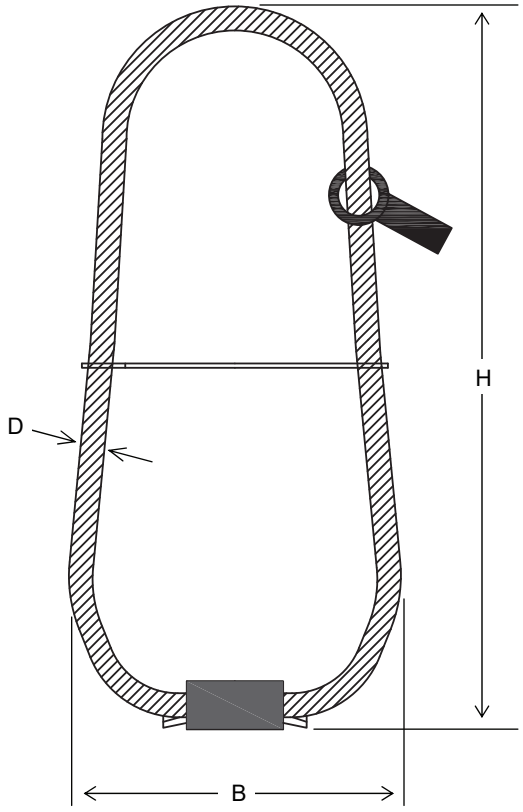
All specifications are subject to changes.

CABLE LOOP ANCHOR

- Ideal for precast concrete units with un-exposed sides after lifting
- Capacities from 0.8 tons to 25 tons
- Protruding loops can be cut off or covered in concrete
- Approximate safety factor of 4:1
- Suggested embedment depth 2/3H to develop Tension SWL

Applications

Precast foundations, beams, ballast and supporting walls.

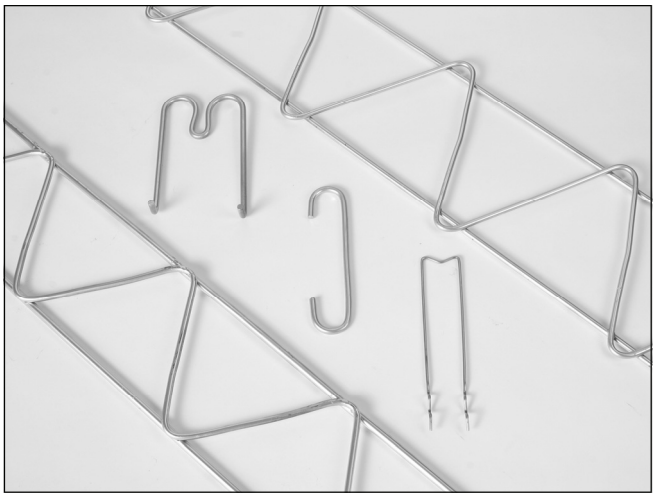


CABLE LOOP ANCHOR							
LOAD RATING	SAFE WORKING LOAD TENSION	WIRE ROPE LENGTH	B	H	ROPE DIA. D	TAG COLORS	PART NUMBER
tons	lb	in.	in.	in.	in.		#
0.8	1,600	21	3.75	8	0.236	White	**SB8WRA**
1.2	2,400	24	4	9	0.276	Red	**SB12WRA**
1.6	3,200	26	5	10	0.315	Purple	**SB16WRA**
2.0	4,000	31	5.25	12	0.354	Green	**SB20WRA**
2.5	5,000	32.5	5.5	13	0.394	Dark grey	**SB25WRA**
3.8	7,600	37	6.5	14.5	0.472	Yellow	**SB40WRA**
5.0	10,000	38	7	15	0.551	Dark blue	**SB50WRA**
6.3	12,600	44	9.25	16.5	0.630	Light blue	**SB63WRA**
8.0	16,000	51	9.25	19	0.709	Light grey	**SB80WRA**
9.9	19,800	55.5	10.25	21	0.787	Pink	**SB99WRA**
12.0	24,000	60	11	23	0.866	Black	**SB120WRA**
16.0	32,000	71	12.75	26	1.024	Brown	**SB160WRA**
18.0	36,000	79	15	29.5	1.102	Orange	**SB180WRA**
25.0	50,000	89	15.75	33.5	1.260	Tan	**SB250WRA**

Based on 4:1 Safety Factor and minimum 4,000 psi normal weight concrete

Special Products

PRODUCT INDEX



MADE IN USA

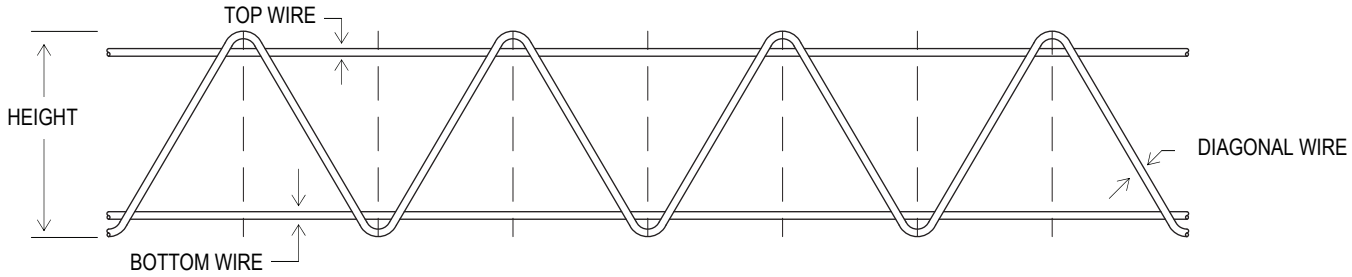
All specifications are subject to changes.

WELDED WIRE GIRDER

The need for more energy-efficient construction has guided the concrete industry into designing and producing more cost effective and time saving precast wall panel techniques. Federal and state energy regulations have driven the industry wall panels, frequently called sandwich panels, because a layer of insulation is "sandwiched" between inner and outer layers of concrete.

SureBuilt Manufacturing offers the welded wire girder in response to the need for a unique shear connector adequate to properly transfer or distribute loading from one width to the other. More often these other connectors are surrounded by a solid concrete section through the panel, resulting in large areas of thermal bridging. The same effect results when panels are framed by a solid concrete section. In these types of design, the solid concrete section generally becomes the shear transfer device as well as the means for major thermal transfer, usually resulting in coil and wet spots on the panels interior surface. SureBuilt Manufacturing girder prevents these undesirable results by not having any solid concrete sections in the entire panel; no high stress points, no major thermal areas, no cold spots, no wet areas, and a more efficient and cost-effective insulated wall panel.

SureBuilt girder not only connects the concrete widths through the insulation material, but more importantly, has the resiliency to expand and contract with the independent thermal-induced movements of the outer width.



TOP WIRE
Maximum size—0GA—0.306 inch diameter
Minimum size—4GA—0.225 inch diameter

BOTTOM WIRE
Maximum size—0GA—0.306 inch diameter
Minimum size—4GA—0.225 inch diameter

DIAGONAL WIRE
Maximum size—3GA—0.243 inch diameter
Minimum size—6GA—0.192 inch diameter

HEIGHT
Minimum size 3" to 9" maximum in incremental changes of 1/2".

LENGTH
Standard length 10 ft. and 12 ft.
Available with galvanized wire.

Wire according to ASTM A82 specification.

INSTALLATION

1. Install bottom width mesh and place single girder in form, tie to mesh or pre-stressed cables.
2. Pour bottom width concrete, raise or rotate single girder to a vertical position such that 2/3 of the girder is standing out of concrete.
3. Install insulation board in strips between the girder and walk along the insulation board, pressing the insulation board in and around the girder diagonal wires. If any gaps or spaces occur, tape or caulk gaps to prevent any concrete bridging between bottom and top widths.
4. Install top width mesh and tie to girder, or to pre-stressed cables for support and proper positioning in center of top width. Place remaining concrete to form top width.

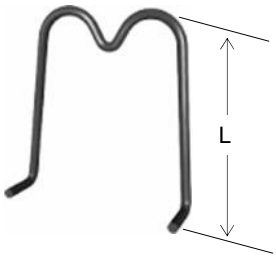
MADE IN USA

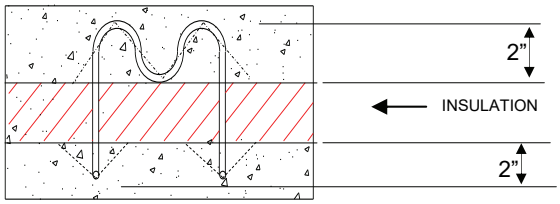
Ordering Information:

Contact your local SureBuilt branch or sales representative for pricing.

"M" CONNECTOR PINS

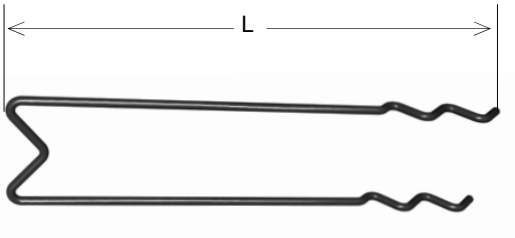
The SureBuilt Manufacturing 3 Gauge M-Connector is available in various sizes for use as a shear connector in concrete sandwich panels.





SANDWICH 'M' CONNECTOR			
HEIGHT	WIRE GAUGE	WEIGHT	PART NUMBER
in.		lb	#
5	3	0.27	SBMC53G
6	3	0.28	SBMC63G
7	3	0.29	SBMC73G
8	3	0.30	SBMC83G

SAFE WORKING LOADS (3:1)			
WIRE GAUGE	CONCRETE STRENGTH	ERECTION SHEAR	TENSION
#	psi	lb	lb
3 GA	3,000	880	1,100
Note: minimum spacing around edge and openings of panel is 12"			

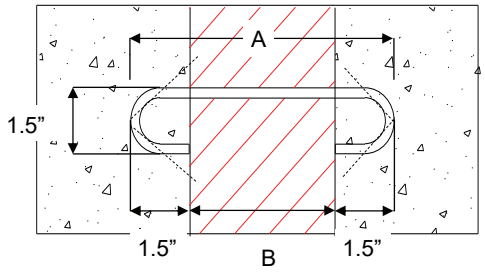


'M' CONNECTOR PIN			
HEIGHT	WIRE GAUGE	WEIGHT	PART NUMBER
in.		lb	#
3-3/4	12	0.028	SBLCP33412GASS
4-3/4	12	0.030	SBLCP43412GASS
6-1/4	12	0.040	SBLCP61412GASS
7	12	0.045	SBLCP712GASS
8	12	0.050	SBLCP812GASS

"C" CONNECTOR PINS

The 3 Gauge Universal C-Connector Pin is used in insulated precast concrete sandwich panels.

The connectors are attached to the insulation at required spacing, then insulation and connectors are placed and finished as usual. The C-Connector Pin is available in the sizes shown or manufactured to job requirements from bright basic or stainless steel wire.



INSULATION THICKNESS

SAFE WORKING LOADS (3:1)			
WIRE GAUGE	CONCRETE STRENGTH	ERECTION SHEAR	TENSION
#	psi	lb	lb
3 GA	3,000	440	580
Note: minimum spacing around edge and openings of panel is 12"			

'C' CONNECTOR				
A	B	WIRE GAUGE	WEIGHT	PART NUMBER
in.	in.		lb	#
3	1	3	0.091	SBCC31
4	1	3	0.104	SBCC41
4	2	3	0.104	SBCC42
5	3	3	0.118	SBCC53
6	3	3	0.132	SBCC63
7	3	3	0.146	SBCC73
8	3	3	0.160	SBCC83

All specifications are subject to changes.

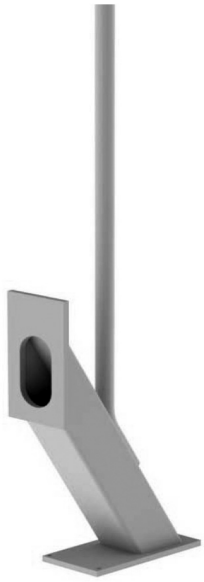
CONNECTION ANCHOR

SLANT ANCHOR

The NoWeld Slant Anchor makes connecting panels to the foundation easy. The anchors come with a specially formulated high strength flow-able grout and a high strength connection rod already cut to length. The Slant Anchor comes ready to install with the Void Former already attached and two nail holes for easy installation into your form.

Features and Benefits

- No field welding
- No threaded bolts or expansion anchors
- No mislocated embedment plates
- Meets structural integrity requirements of ACI-318 16.5.1.3 (b)
- Corrosion resistant finish
- Pre-packaged grout for easy mixture. Available in cementitious or epoxy.



Precast Model

SLANT ANCHOR CAPACITIES			
PART#	UPLIFT	HORIZONTAL	SHEAR
PSAC	9,000	9,000	9,000
PSAE	9,000	9,000	9,000

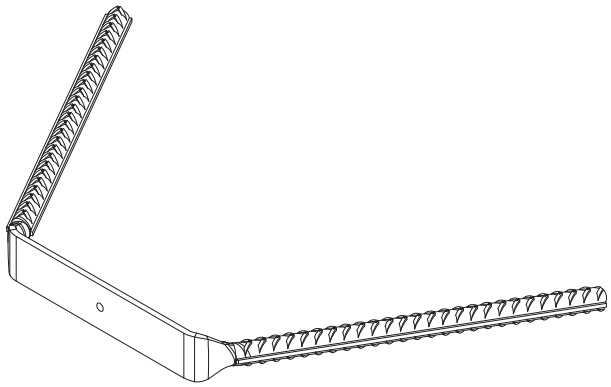
SWL based on an approximate 3:1 Factor of Safety.
Meets nominal tensile strength requirements of ACI-318 16.5.1.3(b) (Tn > 10,000 lb).

SLANT ANCHOR			
PART #	PANEL WIDTH	GROUT	FINISH
PSAC	5 1/2" — 7"	Cementitious	Painted
PSAC-G	5 1/2" — 7"	Cementitious	HDG
PSAE	5 1/2" — 7"	Epoxy	Painted
PSAE-G	5 1/2" — 7"	Epoxy	HDG

High Strength 5/8" Sq. Ductile Bar

EDGE CONNECTORS

Edge Connector is an innovative steel-winged embed designed to withstand and spread concrete forces when connecting flange of double-tee beam, wall or slab to adjacent concrete.
It is commonly used for precast applications including parking garage floors, bridge decks and reinforced roof slabs in industrial buildings.
Patent# US D619885S



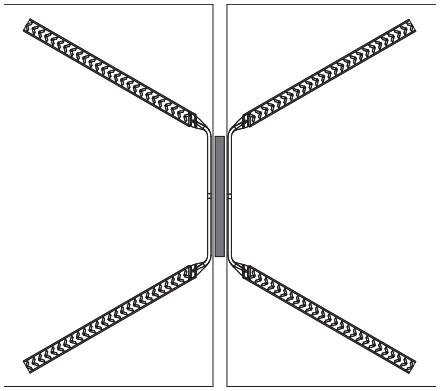
Tension
Connector should be flexible to accommodate volume change movement without developing large tension forces. The Edge Connector provided excellent behavior in tension.

Vertical Shear
Connectors are considered acceptable if they can resist a design vertical shear of 2 to 3 KIPS.

Horizontal Shear
Horizontal shear stiffness and strength are essential. The Edge Connector exhibited high strength, high initial stiffness and good ductility.

Reliability
Good reliability is implied under certain loads for Edge Connector based on the type of failures that were achieved.
Material: SS - 2304 Rebar, A706 Rebar.

Welding
One of the weakest links in precast connections is field placed welds. Round slugs - often preferred by erectors - exhibited greater weld strength variability than connections with rectangular slugs. Fillet welds with rectangular slugs provide more reliable throat thickness. Test report available.



Top view of slab after assembly

MADE IN USA

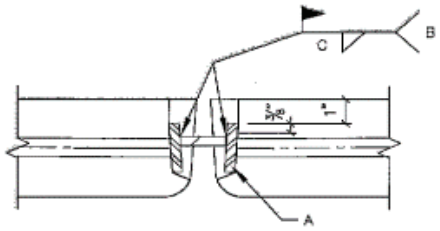
EDGE CONNECTOR PERFORMANCE - ULTIMATE CAPACITY (LBS)					
CONNECTOR SIZE	SIZE	TYPE	VERTICAL SHEAR	TENSION	HORIZONTAL SHEAR
SBEC4R	1.0 x #4	A706 Rebar	3,020	7,210	16,520
SBEC4RSS		2304 Stainless Rebar	3,020	9,340	18,960
SBEC5R	1.5 x #5	A706 Rebar	6,390	11,740	27,680
SBEC5RSS		2304 Stainless Rebar	6,390	12,590	32,670

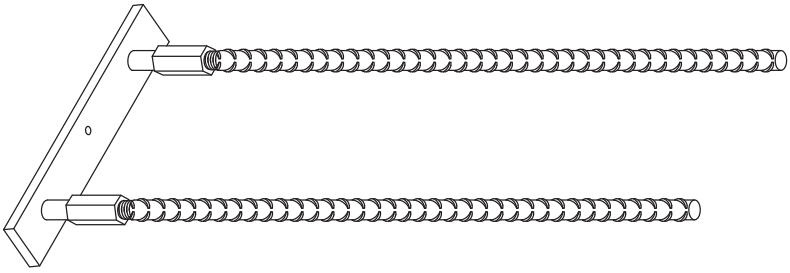
EDGE CONNECTOR FORMERS			
BAR SIZE	FLANGE	COLOR	PART NUMBER
#4	1”	red	**SBEC4F**
#5	1-1/2”	blue	**SBEC5F**

Plastic alignment component centers connector placement on side forms.

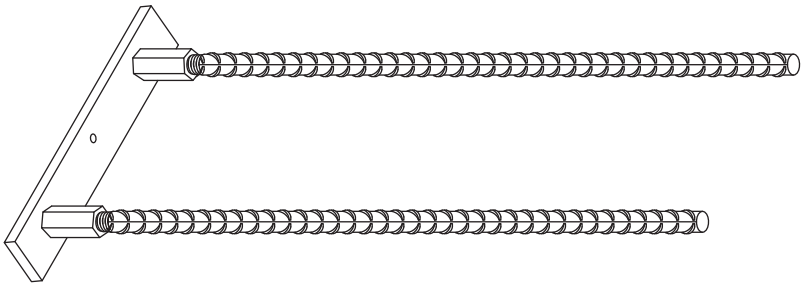
CORD CONNECTORS

Cord connector for Diaphragm reinforcement of
Double T parking structures.
Stainless steel and regular carbon steel face plate.





With Stud



Without Stud

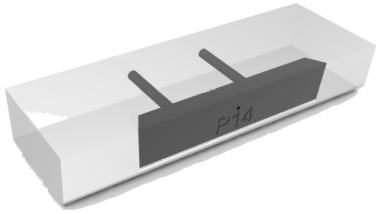
Design References:
PCI Handbook, 6th Edition
AISC Steel Construction Manual, 13th Edition

MADE IN USA

CORD CONNECTOR EMBED						
TYPE	DESCRIPTION	REBAR & LENGTH	PLATE SIZE	STUD SIZE	COUPLER	CAPACITY
CC-47.5K-SS304	Cord Connector 47.5 kips Stainless Steel 304	#6 X 30"	1/2" x 2" x 12"	3/4NC X 2.5	3/4NC X 2.5	47.5Kips
CC- 47.5K	Cord Connector 47.5 kips A36 Carbon Steel	#6 X 30"	1/2" x 2" x 12"	NON	3/4NC X 2.5	47.5Kips

Minimum 5000 PSI concrete
Installed with P14 former
Minimum slug 3/8 x 8 A36
Minimum weld length 7"

P14 former for use with Cord Connector.



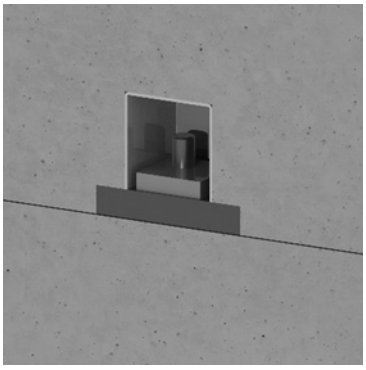
WALL BASE CONNECTION

Standardized and pre-engineered base connection for walls or long columns walls.

- Can be used for wall to base or wall to wall connections
- The assembly with anchor bolts provides a moment stiff connection after bolting
- Avoid need of grouting or welding wall to footings
- Fast structural connection
- Wall base connection is available in most common anchor bolt sizes
- Finish available in black or HDG
- Off set washer included

WALL BASE CONNECTION				
TYPE	**WBC-0.75**	**WBC-1**	**WBC-1.25**	**WBC-1.50**
bolt connection	3/4 NC	1 NC	1.25 NC	1.50 NC
shear capacity Kips	9.55	17	27	47
tension capacity Kips	19	34	54	95
base plate	3.5 x 6.5	4 x 7	5 x 8	6 x 10
hole size slotted Adjustment	1.125" x 3"	1.375" x 3.25"	1.75" x 3.5"	2" x 3.75"
plate thickness	3/4"	1.25"	1.75"	2"
rebar size x length	#5 x 33	#6 x 42	#8 x 52	#9 x 70"
Bolt F1554-gr-55	gr-55	gr-55	gr-55	gr-90
corresponding bolt NC	3/4 x 16"	1 x 17"	1.25 x 20"	1.5 x 30"

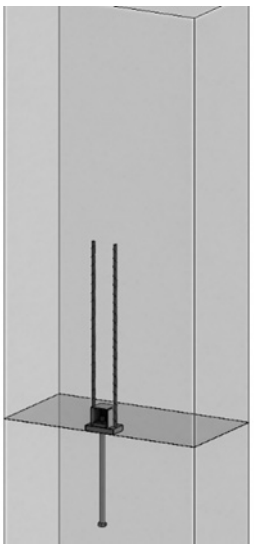
Tension capacity is based on 6000 psi concrete.



Moment connection need to be checked and approved by EOR.

All materials used are: plate minimum A572 Gr 50, rebar A706, welding according to AWS.

Walls need to be grouted at bottom as soon as possible before applying any additional load.



All specifications are subject to changes.

COLUMN BASE CONNECTION

Standardized and pre-engineered base connection for columns. They can be used for column to base or column to column connections .

- The assembly with anchor bolts provides a moment stiff connection after bolting
- Avoid need of bracing, and make it easy to plumb setting the columns
- Column Base connection is available in most common anchor bolt sizes
- Finish available in black or HDG

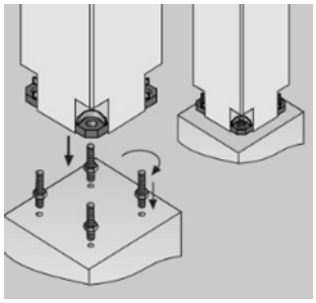
COLUMN BASE CONNECTION				
TYPE	**WBC-0.75**	**WBC-1**	**WBC-1.25**	**WBC-1.50**
bolt connection	3/4 NC	1 NC	1.25 NC	1.50 NC
shear capacity Kips	9.55	17	27	47
tension capacity Kips	19	34	54	95
base plate	3.5 x 3.5	4 x 4	5 x 5	7 x 7
hole size	1.125"	1.375"	1.75"	2"
plate thickness	3/4"	1.25"	1.75"	2"
rebar size x length	#5 x 33	#6 x 42	#8 x 52	#9 x 70"
Bolt F1554-gr-55	gr-55	gr-55	gr-55	gr-90
corresponding bolt NC	3/4 x 16	1 x 17	1.25 x 20	1.5 x 30

Tension capacity is based on 6000 psi concrete.

Moment connection need to be checked and approved by EOR.

All materials used are: plate minimum Gr 50, rebar A706, welding according to AWS.

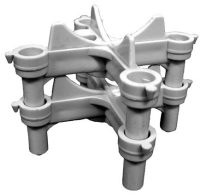
Columns need to be grouted at bottom as soon as possible before applying any additional load.



PLASTIC REBAR SUPPORT

BAR CHAIRS

SIZE (MM)	PART #	PCS/CTN	WEIGHT/CTN	CTNS/SKID	PIECES/SKID
3/4" (19)	**SBUPEBC34**	800	18	45	36,000
1" (25)	**SBUPEBC1**	600	16	45	24,750
1-1/4" (32)	**SBUPEBC114**	500	17	45	22,500
1-1/2" (38)	**SBUPEBC112**	450	16	45	20,250
1-3/4" (45)	**SBUPEBC134**	400	14	45	18,000
2" (51)	**SBUPEBC2**	350	14	45	15,750



MADE IN USA

2" wide Stackable

HIGH CHAIRS

SIZE (MM)	PART #	PCS/CTN	WEIGHT/CTN	CTNS/SKID	PIECES/ SKID
2-1/4" (60)	**SBUPEHC214**	230	20	24	4,800
2-1/2" (65)	**SBUPEHC212**	220	20	24	4,800
2-3/4" (70)	**SBUPEHC234**	210	19	24	4,800
3" (76)	**SBUPEHC3**	180	17	24	3,600
3-1/4" (85)	**SBUPEHC314**	160	16	24	3,600
3-1/2" (90)	**SBUPEHC312**	150	15	24	3,600
3-3/4" (95)	**SBUPEHC334**	140	15	24	3,000
4" (100)	**SBUPEHC4**	400	43	24	3,000

4" wide Stackable

SAND PLATES

SIZE (MM)	PART #	PCS/CTN	WEIGHT/CTN
Spec with Chair	**SBSNDP**	250	18

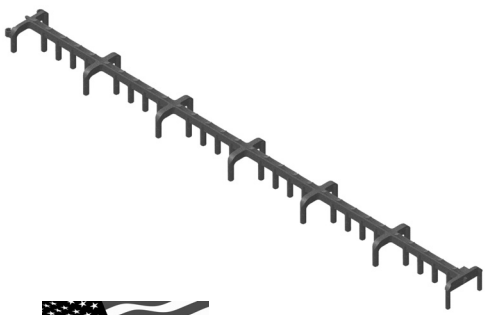
For Bar Chairs and High Chairs

REBAR CLIP CHAIRS

BAR SIZE	PART #	CONCRETE CVR (MM)	PCS/CTN
#3 - #6	**SBRCC34**	3/4" (20)	300
#3 - #6	**SBRCC1**	1" (25)	300
#3 - #6	**SBRCC112**	1-1/2" (40)	300
#3 - #6	**SBRCC2**	2" (50)	100

SLAB BOLSTERS

SIZE (MM)	PART #	WEIGHT/ SKID	PCS/CNT	CTNS/SKID	FT/PALLET	PIECES / SKID
3/4" (20)	**SBUPSSB34**	644.0	80	28	5600	2240
1" (25)	**SBUPSSB1**	588.0	70	28	4900	1960
1-1/4" (30)	**SBUPSSB114**	616.0	70	28	4900	1960
1-1/2" (40)	**SBUPSSB112**	518.0	55	28	3864	1546
1-3/4" (45)	**SBUPSSB134**	392.0	40	28	2800	1120
2" (50)	**SBUPSSB2**	406.0	40	28	2800	1120
2-1/4" (55)	**SBUPCSB214**	420.0	40	28	2800	1120
2-1/2" (60)	**SBUPCSB212**	434.0	40	28	2800	1120
2-3/4" (70)	**SBUPCSB234**	350.0	32	28	2240	896
3" (75)	**SBUPCSB3**	364.0	32	28	2240	896



MADE IN USA

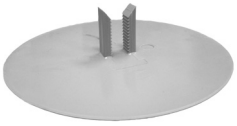
This is connectible. Composite high chair on request.

All specifications are subject to changes.

PLASTIC PRODUCTS

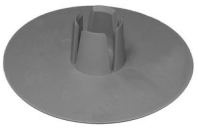
SHIM PACK					
SIZE	THICKNESS	SET QTY	CASE QTY	WEIGHT / SET	PART NUMBER
in. x in.	in.	pcs/set	sets\box	lb	#
4 x 6	1/16	1	60	0.91	SBUSP
4 x 6	1/8	2			
4 x 6	1/4	3			

PATCH CAPS			
DESCRIPTION	CARTON QTY	WEIGHT	PART NUMBER
	pcs	lb	#
3/4" Brace Anchor	750	0.5	SBPATCHCAPBI
Ring Lift 22 XL	72	1.3	SBRLPC22KP
Uni-Lift 4T	160	1.3	SBPATCHCAP



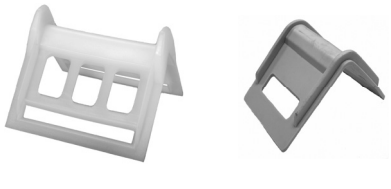
RLPC22KP

PATCHCAPBI

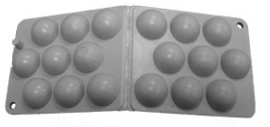


PATCHCAP

CORNER GUARD TW		
DESCRIPTION	SIZE (MM)	PART #
Corner Guards, TW	4-3/4" x 4-3/4" (120x120)	SBCG
Corner Guards Small	3-1/2" x 3-1/2" (90x90)	SBCGS



PANEL PADS				
DESCRIPTION	PART #	SIZE (MM)	PCS/CTN	WEIGHT /BOX
Standard	SBUPPP	2-1/2" x 6" (64x152)	250	11
Heavy Duty	SBUPPHD	2-1/2" x 6" (64x152)	250	13



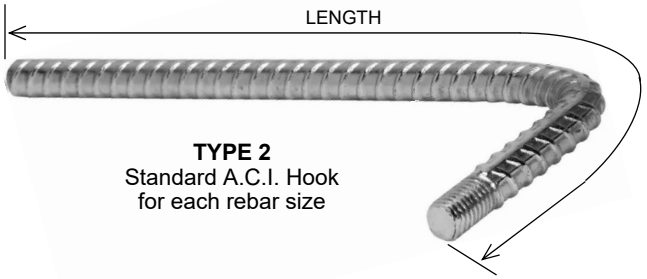
THREADED DOWEL BAR

Dowel bar substitutes are available in grade 60 rebar or high carbon smooth bars. Either type is available with epoxy coating upon request. Combined with the threaded rebar couplers, creates an efficient and safe alternative to protruding rebar and expensive forming cost.

ASTM A-615 GRADE 60 REBAR

BOLT DIAMETER	BAR SIZE	WEIGHT /LN. FT.	NOMINAL DIAMETER	CROSS SECTIONAL AREA	MINIMUM LOAD		
					P_γ	1.25 P_γ	1.50 PULT
NC	#	lb	in.	sq. in.	lb	lb	lb
1/2	4	0.668	0.500	0.20	12,000	15,000	18,000
5/8	5	1.043	0.625	0.31	18,600	23,250	27,900
3/4	6	1.502	0.750	0.44	26,400	33,000	39,600
7/8	7	2.044	0.875	0.60	36,000	45,000	54,000
1	8	2.670	1.000	0.79	47,400	59,250	71,100
1-1/8	9	3.400	1.128	1.00	60,000	75,000	90,000
1-1/4	10	4.303	1.270	1.27	76,200	95,250	114,300
1-3/8	11	5.313	1.410	1.56	93,600	117,000	140,400

TYPE 1
Standard straight bar
for each rebar size



TYPE 2
Standard A.C.I. Hook
for each rebar size

THREADED REBAR COUPLERS

The threaded rebar couplers are combined with the dowel bar substitutes to provide an efficient and safe alternative to conventional forming of protruding rebar. Fastening to the inside of the formwork by nails or an NC threaded bolt, the threaded rebar coupler allows for stripping and worker safety by completing the splice at a later time.

ORDERING INFORMATION:

- Material: ASTM A-615 Grade 60 Rebar (A-706 Available).
- Meets ACI 318 Type 1 splicing requirements
- Length of splices based on C.R.S.I. and A.C.I. specifications.
- Threaded rebar couplers available in round and hex .
- Epoxy coating available.

THREADED REBAR COUPLER

BAR SIZE	COUPLER OD	LENGTH	PLATE SIZE	THREAD	MINIMUM LOAD 1.25 P_γ	PLAIN PART NUMBER	EPOXY PART NUMBER	WEIGHT/ EA
#	in.	in.	in. x in.	#	lb	#	#	lb
4	7/8	1-3/4	2 x 2	1/2-13 NC	15,000	SBTRC4PL	SBTRC4EP	0.2
5	1	2	2 x 2	5/8-11 NC	23,250	SBTRC5PL	SBTRC5EP	0.3
6	1-1/8	2-1/8	2 x 2	3/4-10 NC	33,000	SBTRC6PL	SBTRC6EP	0.4
7	1-1/4	2-1/2	2 x 2	7/8-9 NC	45,000	SBTRC7PL	SBTRC7EP	0.5
8	1-1/2	3	2 x 2	1-8 NC	59,250	SBTRC8PL	SBTRC8EP	0.7
9	1-5/8	3-1/2	2 x 2	1 1/8-7 NC	75,000	SBTRC9PL	SBTRC9EP	1.1
10	2	4	3 x 3	1 1/4-8 UN	95,250	SBTRC10PL	SBTRC10EP	1.7
11	2	4-1/2	3 x 3	1 3/8-8 UN	117,000	SBTRC11PL	SBTRC11EP	2.2

Also available without flange. Mounting washer included.

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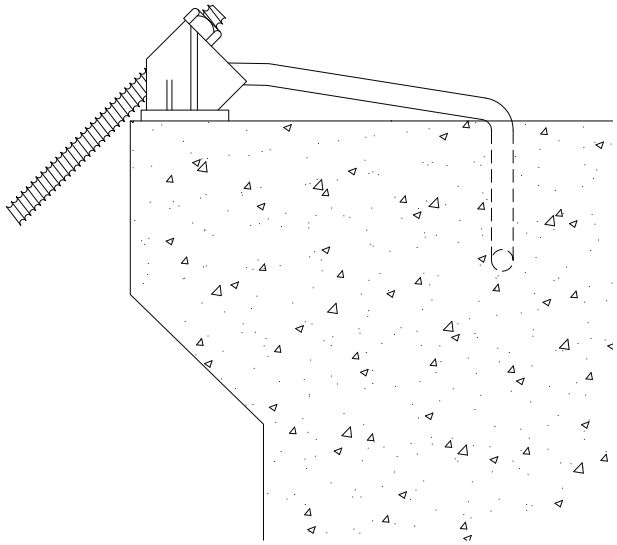
All specifications are subject to changes.

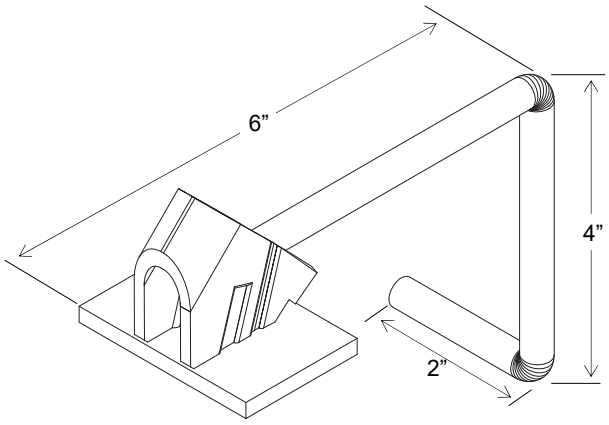
45° PRES-STEEL PRECAST HALF HANGER WITH PLATE

Better support on top of a precast concrete beam for support overhang framework.

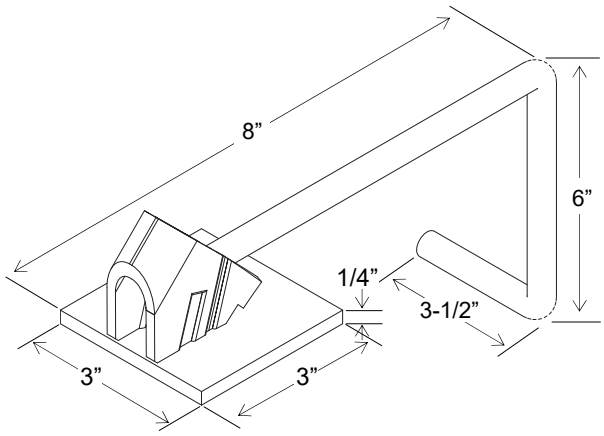
- Fabricated with a 45° 1/2" end-clip welded to a wire embed
- Designed to be cast into the top of a precast concrete beam for supporting overhang framework
- Attached plate for better placing in precast wet concrete, the poor quality of concrete on top of the beam (wafer and fine aggregate)



EXTERIOR HALF HANGERS w/ PLATE	
SAFE WORKING LOAD	PART NUMBER
lb	#
6,000	PSHH4APRP
11,300	PSHH9APRP
Approximate SWL Safety Factor of 2:1	



4 APRP



9 APRP

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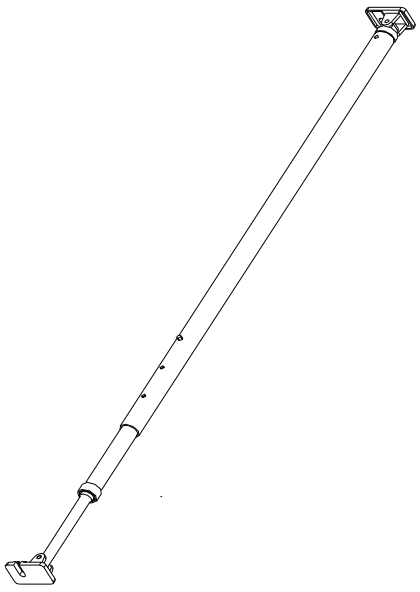
PIPE BRACING

It is important to attach braces before lifting concrete panels. It is much quicker and safer to do this work while the panel is flat rather than doing it on a ladder after the panel is upright. A minimum of two braces are needed to align the panel, although some panels may need more.

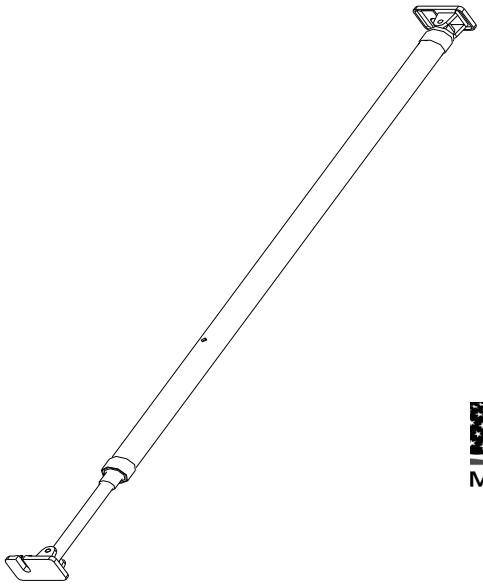
Use knee bracing where the wind force is high. Warning: Do not remove braces until all structural connections are completed. Once braces are removed, workers can patch holes in the floor and complete other finish work.

TYPE	DESCRIPTION PIPE/CONNECTOR/ROD	BRACE LENGTH		SAFE WORKING LOAD w/o Knee Bracing	BRACE WEIGHT (lb)
		MIN.	MAX.	MAX.	
ADJUSTABLE PIPE BRACES					
SBUP1	Adjustable Pipe Brace-Onsite Pipe Reg.	7'-6"	14'-0"	6,500 / 2,000	95.0 lb
SBUP4	Adjustable Pipe Brace-Heavy Duty	14'-0"	23'-6"	6,500 / 1,950	130.0 lb
SBUP5	Adjustable Pipe Brace-Long Heavy Duty	22'-6"	39'-0"	6,500 / Not Recommended	208.0 lb
FIXED PIPE BRACES					
SBUP8	Fixed Pipe Brace	21'-3"	22'-9"	6,500	136.0 lb
SBUP9	Fixed Pipe Brace w/ 5ft. Extension	26'-3"	27'-9"	4,800	188.0 lb
SBUP10	Fixed Pipe Brace w/ 10ft. Extension	31'-3"	32'-9"	3,600	224.0 lb
SBUP17	Fixed Pipe Brace	16'-6"	17'-6"	6,500	105.0 lb
SBUPE5	Fixed Pipe Brace, 5ft. Extension Only	5'-0"	-	-	23.0 lb
SBUPE10	Fixed Pipe Brace, 10ft. Extension Only	10'-0"	-	-	46.0 lb
SBUPEC	Fixed Pipe Extension Coupler	4'-0"	-	-	42.0 lb
HEAVY DUTY BRACES, 5.5" Diameter					
SBUP11	Fixed Brace Heavy Duty	31'-0"	32'-6"	9,000	295.0 lb
SBUP14	Fixed Brace HD w/ 10ft. Extension	41'-6"	42'-6"	5,360	400.0 lb
SBUP15	Fixed Brace HD w/ 20ft. Extension	51'-6"	52'-6"	3,850	520.0 lb
SUPER DUTY BRACES, 8" Diameter					
SBUP17	Fixed Brace 42'	41'-0"	42'-6"	9,000	750.0 lb
SBUP18	Fixed Brace 52'	51'-0"	52'-6"	9,000	850.0 lb

SWL provides a minimum safety factor of 1.5 to 1.



UP1-UP5 ADJUSTABLE PIPE BRACING



UP8-UP15 FIXED PIPE BRACING

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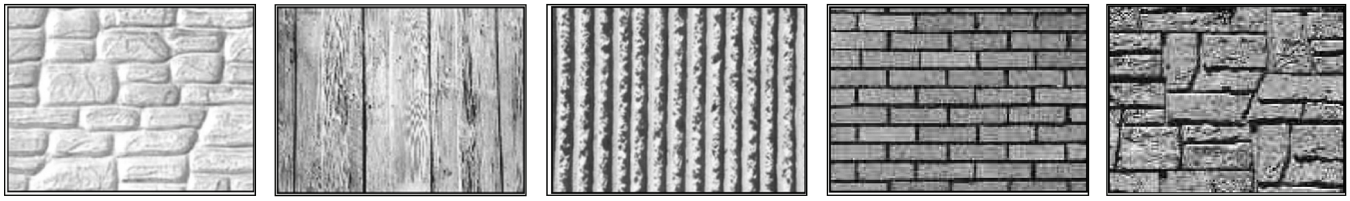
All specifications are subject to changes.

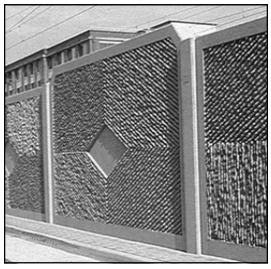
DECORATIVE FORMLINERS

When forming walls, using a quality formliners can add long lasting beauty and strength to a wall for generations to come at an affordable price. High level of service and quality meet the high expectations required for tilt-up and precast applications.



Larger Inventory
Hundreds of patterns are available; including brick, rope, fractured fin and wood, as well as most DOT specified textures, SureBuilt offers one of the widest ranges of form liner options available. Choose from one hundred standard formliner patterns currently being used by State Departments of Transportation, airports, architectural/engineering firms and designers across the United States and Canada. Our experienced designers can help you create custom patterns. We can take your creative projects further.

We offer several advantages:



- Hard to find standard lengths
- Single-use, multi-use and extended-use material options
- Four proven manufacturing processes
- End-to-end and side-to-side matching for a seamless concrete patterns
- Cost effective and competitively priced, while remaining accessible through our nationwide sales offices

SureBuilt will help you select the right material type and/or gauge that is most appropriate and cost-effective for your specific application. We base the product selection on several factors

Application used	Tilt-up, cast-in-place or precast.
How many re-uses?	SureBuilt offers several types of plastics that offer different re-use.
Rate-of-Pour	Most plastic liners cannot withstand a rate-of-pour in excess of five feet per hour. When the rate-of-pour exceeds this standard, a higher-grade form liner material will be recommended (i.e., fiberglass or urethane).
Finished Texture	Detailed finishes are successfully accomplished with a flexible, high grade form liner material.
Design Depth	High relief designs are reproduced successfully and cost-effectively by using a lightweight form liner material, such as fiberglass.
Design Shape	Geometric designs will be faithfully reproduced using fiberglass, ABS or styrene plastic liners. Undercut designs will be successfully replicated using a highly flexible liner material such as urethane.
Labor Budget	In some cases, consultation with Design Department will eliminate unnecessary job site labor costs for tasks such as trimming, material backing or sacking/patching.
Project Budget	SureBuilt's product recommendation will always be based upon total project cost parameters, and options of varying cost will be presented at the customer's request.

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Product index:

ASTM Standard Reinforcing Bars

Bar Size Designation		Weight		Nominal Dimensions - Round Selections			
				Diameter		Cross Section Area	
Imperial	Metric	lb/ft	kg/m	in.	mm	$in.^2$	mm^2
#3	#10	.376	.560	.375	9.5	.11	71
#4	#13	.668	.994	.500	12.7	.20	129
#5	#16	1.043	1.552	.625	15.9	.31	199
#6	#19	1.502	2.235	.750	19.1	.44	284
#7	#22	2.044	3.042	.875	22.2	.60	387
#8	#25	2.670	3.973	1.000	25.4	.79	510
#9	#29	3.400	5.060	1.128	28.7	1.00	645
#10	#32	4.303	6.404	1.270	32.3	1.27	819
#11	#36	5.313	7.907	1.410	35.8	1.56	1006
#14	#43	7.650	11.380	1.693	43.0	2.25	1452
#18	#57	13.600	20.240	2.257	57.3	4.00	2581

Conversion Chart from Imperial to Metric Units

Symbol	Imperial		Metric	Symbol
Length				
in.	1 inch		25.4 millimeters	mm
ft	1 foot	12 inches	0.3048 meter	m
yd	1 yard	3 feet	0.9144 meter	m
mi	1 mile	1760 yards	1.6093 kilometers	km
Mass				
oz	1 ounce	437.5 grains	28.35 grams	g
lb	1 pound	16 ounces	0.4536 kilograms	kg
T	1 short ton (US)	2000 pounds	0.907 metric ton	t
T	1 long ton (UK)	2240 pounds	1.016 metric tons	t
Volume				
fl oz	1 fluid ounce (US)	1.0408 fluid ounce (UK)	29.574 milliliters	ml
gal	1 gallon	16 fluid ounces	0.4731 liters	L
ft^3	1 cubic foot		0.028 cubic meters	m^3
yd^3	1 cubic yard		0.765 cubic meters	m^3
Temperature				
F	Fahrenheit Scale	C = (F-32) * 5/9 F = (9/5*C) + 32	Celsius scale (Centigrade)	C

Contact your SureBuilt representative for pricing.

LIMITED WARRANTY

SureBuilt Manufacturing (hereafter known as Supplier) warrants that the Supplier of concrete accessory products sold to Purchaser will be free from defects in materials and workmanship for a period of six (6) months from the date of delivery, and the Supplier will repair, or in its sole discretion, replace, any Product or part thereof found to be defective at the time of delivery if such Product or part is returned (at Purchaser's expense and risk) and received by the Supplier within ten (10) days after the applicable warranty period. Descriptions, representations and other information concerning the Supplier contained in the Supplier's catalogs, advertisements or other promotional materials or statements or representations made by the Supplier's sales agents or representatives shall not be binding upon the Supplier and shall not be part of this limited warranty unless expressly identified in writing as PRODUCT SPECIFICATIONS.

This limited warranty does not cover normal maintenance, or items consumed during installation or normal operations, normal wear and tear, use under circumstances exceeding specifications, use for purposes other than the use for which the Products were intended, abuse, unauthorized repair or alteration, improper installation, failure to follow the Supplier's printed instructions, guidelines and recommendations for installation and use, lack of proper maintenance or damage caused by natural causes such as fire, storm, or flood. Purchaser shall determine the suitability of the Product for his intended use and Purchaser assumes all liabilities and risks whatsoever in connection therewith.

This limited warranty is Purchaser's exclusive remedy. It shall not be deemed to have failed of its essential purpose so long as the Supplier is willing and able to repair or replace defective products or parts thereof in the manner specified. No allowance will be made or repairs made by Purchaser.

Except as herein provided, the Supplier shall not be liable to Purchaser in any manner with respect to the Products. In no event shall the Supplier liability to Purchaser ever exceed the purchase price of the allegedly defective Product. Except as herein provided, the Supplier shall not be liable for transportation, labor or other charges for adjustments, repairs, replacements of parts, installation, or other work, which may be done upon or in connection with the Products sold.

THE SUPPLIER SHALL NOT IN ANY EVENT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY NATURE WHATSOEVER, INCLUDING LOST PROFITS, whether arising from any defect in the Products, any use of the Products, from Purchaser's inability to use the Products, or otherwise. This limited warranty applies to only products made by the Supplier.

NO OTHER EXPRESS AND NO IMPLIED WARRANTIES OF ANY TYPE, WHETHER FOR MERCHANTABILITY, FITNESS FOR A PARTICULAR USE, OR OTHERWISE, OTHER THANTHOSE EXPRESSLY SET FORTH ABOVE (WHICH ARE MADE EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES) SHALL APPLY TO THE PRODUCTS.

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