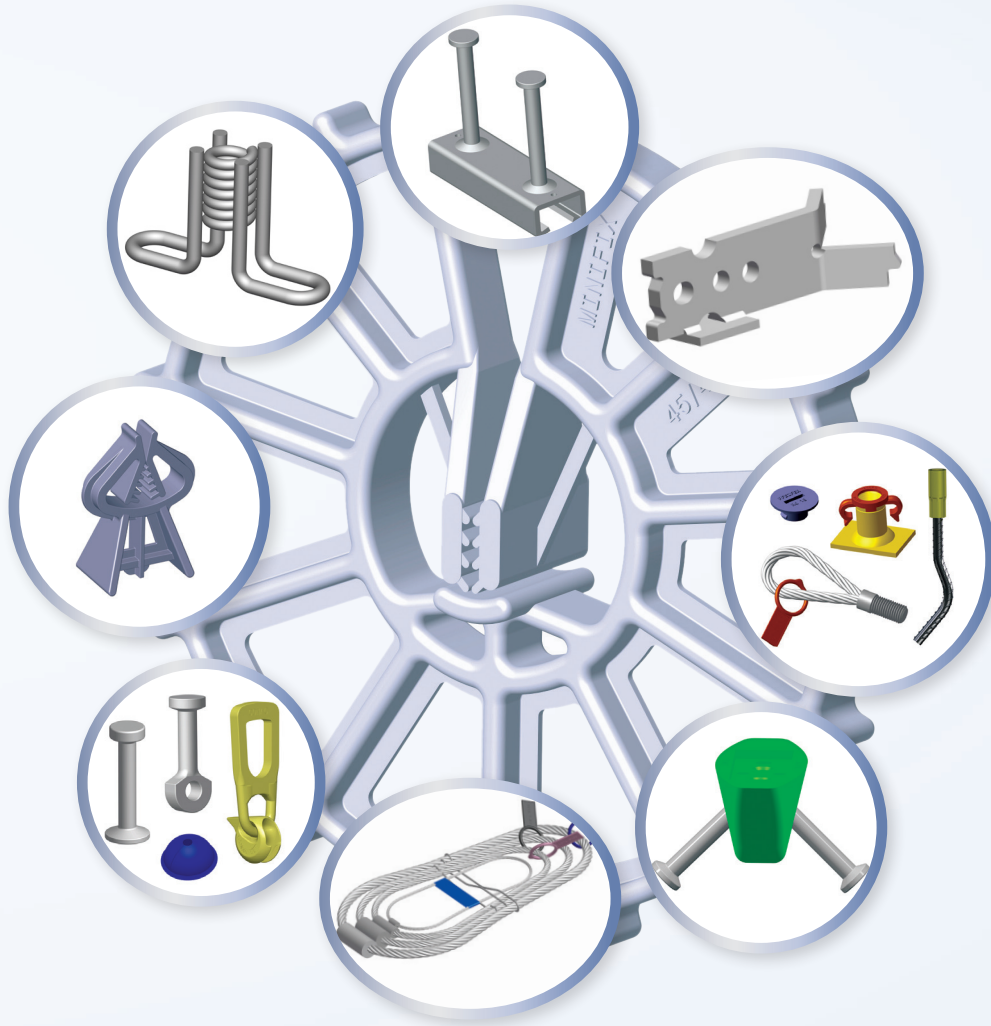


# CONAC

## Concrete Lifting Solutions



**PREMIER SOURCE FOR CONCRETE  
ACCESSORIES AND LIFTING SYSTEMS**

**Product Handbook**

# About CONAC

---

CONAC was established in 1985 to provide high quality and cost effective materials to the precast and prestressed concrete industry. After many proud years serving our customers, CONAC enjoys the loyalty of hundreds of customers throughout the United States and Canada. Our network of sales professionals meet face to face with customers on a regular basis to experience their business first hand and see how CONAC can help them grow and address any challenges they face.

CONAC takes pride in providing the finest customer service in the industry, and our three well stocked warehouses in Atlanta, GA, Scranton, PA and Las Vegas, NV ship most orders the same day. Our committed and knowledgeable customer service team is always ready to help our customers, and dedicated technical service assistants stand ready to provide their expertise when needed.

CONAC's products include a complete line of high quality concrete lifting systems, plastic rebar supports, and a variety of other accessories. As a financially sound company CONAC is able to maintain large supplies of raw material and inventory to avoid price volatility and ensure that we maintain our position as the premier low-cost producer in the industry.

CONAC is well known as an innovative company constantly searching for new and better ways to support our customers. Over the years we have introduced numerous products from Europe and around the world that have gone on to become staples in the North American industry. In addition to development and expansion of new product lines, we are constantly evaluating products we already have for ways to improve their effectiveness or make them more user friendly and/or more economical.

**Proud  
Member and Supporter of:**



CONAC  
Concrete Accessories of GA Inc.  
4475 River Green Pkwy  
Suite 100  
Duluth, GA 30096

Toll Free: 800-336-2598  
Fax: 770-417-1820  
[www.conacweb.com](http://www.conacweb.com)

Revision date: 1/4/2021

# Table of Contents

---

**SAFETY NOTES** ..... 7-12  
**TERMS AND CONDITIONS** ..... 13

## LIFTING SYSTEMS

A-Anchors ..... 15-18  
A-W Anchors ..... 76  
Coil Inserts ..... 54-62  
DR-Anchors ..... 45-52  
Flat Steel Anchors ..... 20-43  
Heba-T ..... 76  
Manhole Lifting ..... 74  
Recon (All Purpose) Anchors ..... 76  
Stone Strong Anchor ..... 75  
Threaded Lifting ..... 64-69  
Wire Rope Anchors ..... 70-71

## CONNECTION SYSTEMS

Channel Anchors ..... 84-85  
Ferrule Inserts ..... 78-81  
Insulated Panel Connectors ..... 87  
Threaded Zinc Inserts ..... 82

## PLASTIC SPACERS & REBAR SUPPORT

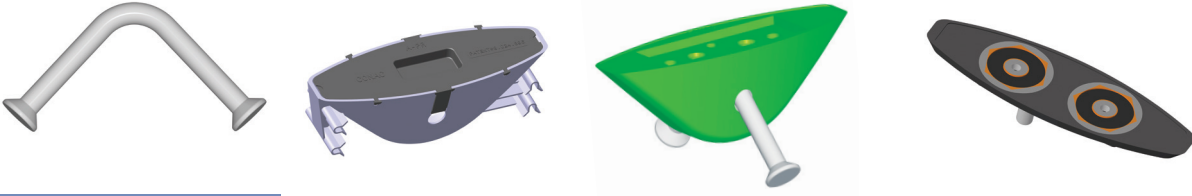
Accessories ..... 95  
AC-Chairs ..... 93  
Cross Chairs ..... 92  
Plastic Bolsters ..... 94  
Rebar Clips ..... 91  
Spacer Wheels ..... 89-90  
Styrofix ..... 94  
Wire High Chairs ..... 92

## FORMWORK

Chamfers ..... 99-100  
Magnets ..... 98-99  
Form Accessories ..... 100-101

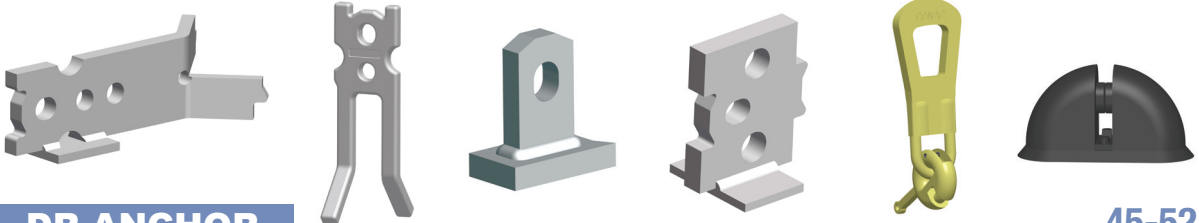
**A-ANCHOR**

15-18



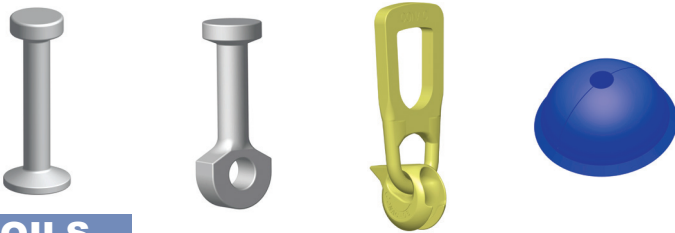
**FLAT STEEL**

20-43



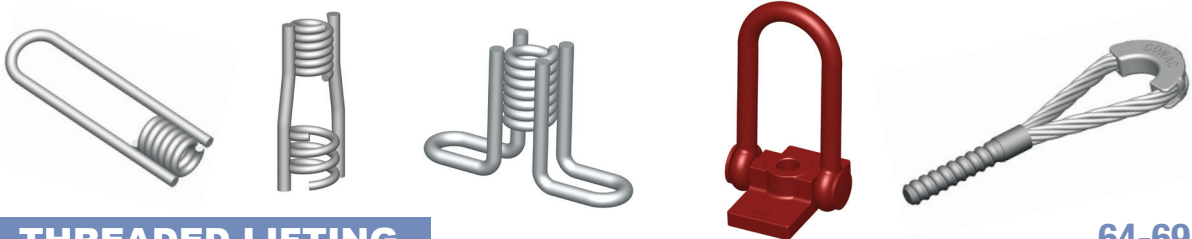
**DR ANCHOR**

45-52



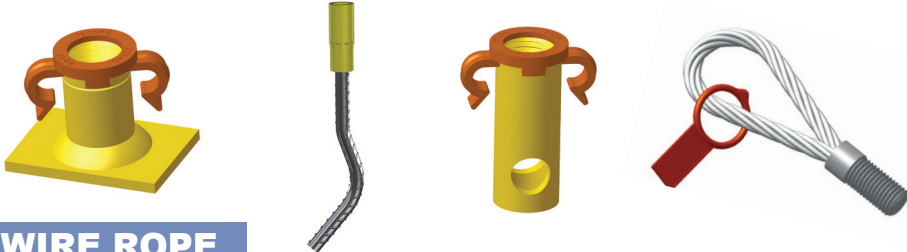
**COILS**

54-62



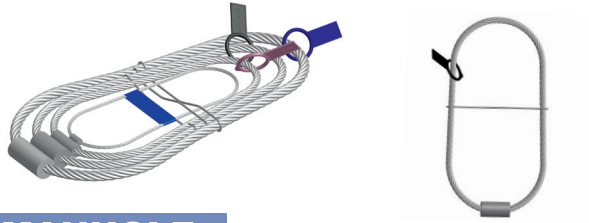
**THREADED LIFTING**

64-69



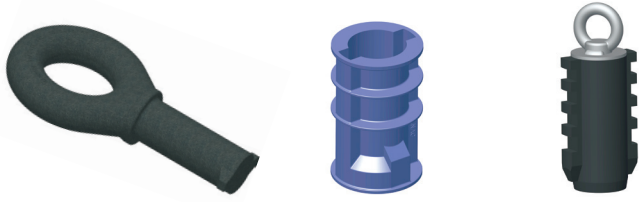
**WIRE ROPE**

70-71



**MANHOLE**

74



**Table of Contents**

**STONE STRONG, RECON, A-W ANCHOR**

75-76



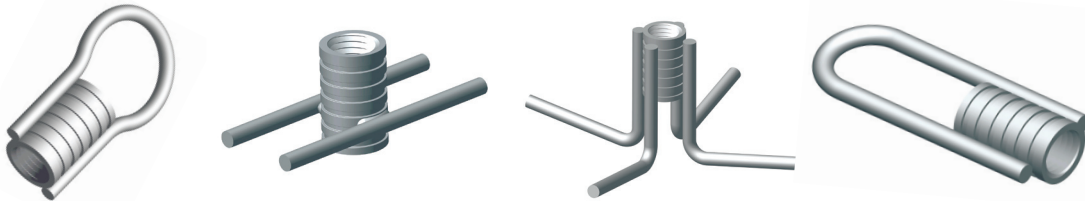
**HEBA-T SYSTEM**

76



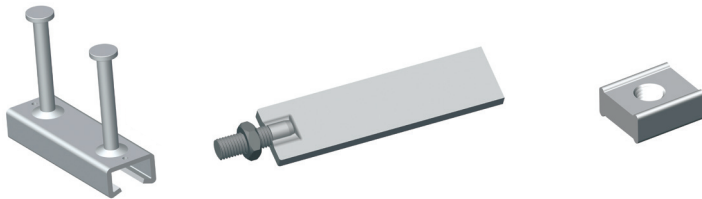
**FERRULE INSERTS**

78-81



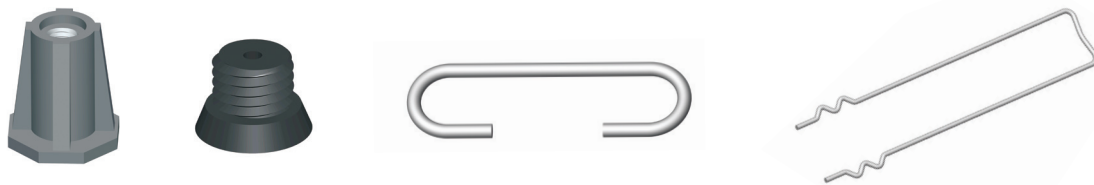
**CHANNEL ANCHORS**

84-85



**ZINC INSERTS, CONNECTORS**

82, 87



**PLASTIC SPACERS, ACCESSORIES**

88-96



**MAGNETS, FORM ACCESSORIES**

97-101





## SAFETY FACTOR

Appropriate safety factors are determined by various agencies, by product type and by application. The user should ensure compliance with all applicable regulations and recommended industry practices before deciding the safe working load to apply. Important references include but are not limited to: Occupational Safety and Health Administration Act, Part 1926 and American National Standards Institute, ANSI 10.9.

The load capacities shown in this catalog are based on normal weight concrete strengths as indicated on product load tables with the following safety factors:

Cast-in lifting anchors 4:1  
Lifting units 5:1  
Connections 3:1

The load capacities of all lifting products can be affected by many variables. It is recommended that each lifting condition be reviewed carefully by an experienced Professional Engineer before products are selected for use. Anchor placement and lifting operations should be supervised by trained personnel.

## TYPICAL VARIABLES THAT AFFECT THE CAPACITY OF CAST-IN ANCHORS AND LIFTING UNITS

### • The compressive strength of the concrete and the aggregate type

Lower concrete strengths or the use of light weight concrete will reduce the capacity of the anchors. The factor  $\sqrt{\frac{\text{Project } F'c}{5,000}}$  may be applied to catalog loads when calculating anchor capacities in normal weight concrete with a compressive strength in the range of 1,600 – 5000 PSI. The effect of lightweight concrete will vary and should be determined either through testing or by a Professional Engineer.

### • The position of anchors

Check to ensure that anchors are installed using the correct accessories. They should be perpendicular relative to the surface of the concrete, and at the correct depth. To ensure that the applied loads are supported by an adequate area of concrete, anchors should be spaced appropriately in relation to other anchors and the edge of the concrete. To equally distribute loads among lifting anchors, particular care should be taken to position anchors relative to the center of gravity of the concrete unit being lifted.

### • Concrete compaction around the anchor

The concrete should be adequately vibrated around the anchor after placement to ensure efficient load transfer.

### • The type of load applied to the anchor

The shear capacity of an anchor will typically vary from its tension capacity. Check product information carefully as some anchors are only recommended for tension loads.

### • Impact and acceleration loads

Excessive impact or acceleration loads transmitted by lifting gear can increase the loads on the lifting system. The method of lifting should be reviewed by a Professional Engineer prior to use.

### • Damage or modification/welding

Do not weld or modify lifting units or anchors. The user should establish an inspection system to check components prior to use. Damaged, worn, or deformed products should be discarded.

### • Rigging

Rigging should be designed to ensure effective distribution of loads to all lifting anchors being utilized. The use of inclined sling lines will increase the loads applied to the anchor. The load magnification effect of the rigging configuration should be carefully reviewed by a Professional Engineer before use.

### • Adhesion to forms

Concrete will adhere to all form types increasing the load applied to the lifting system. The amount of increase will vary depending on the type of form used, and should be calculated prior to use.

### • Lifting Unit and Anchor use

Before lifting, the lifting unit should be checked to ensure it is fully engaged with the anchor. Lifting units and anchors from different manufacturers should not be used together.

### • Impact Wrench

Impact wrenches should never be used to tighten bolts used for lifting, connections, transporting or bracing.

Failure to observe any safety recommendations can result in a service failure of the lifting system possibly leading to injury or death. For a more detailed analysis of these topics please request more detailed information relative to the specific anchor to be used.

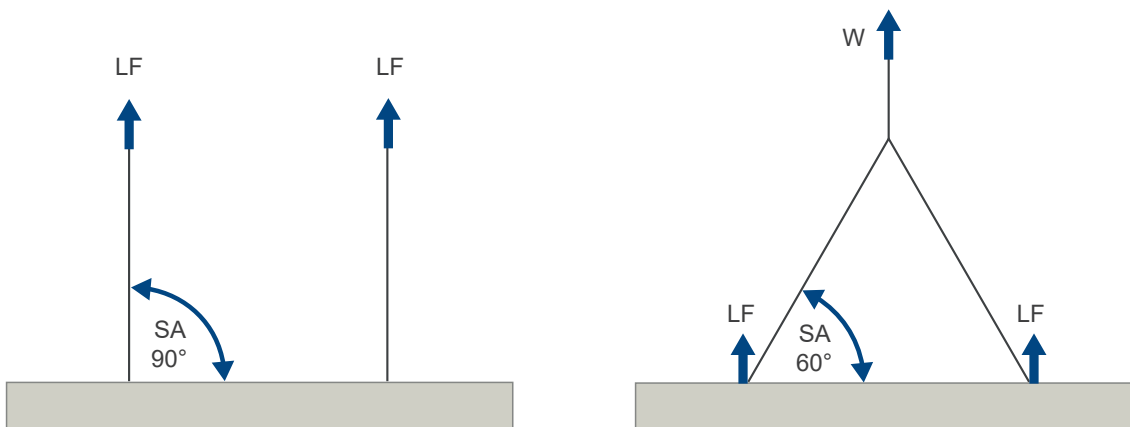
The information presented below is designed to serve as supplemental information for users of CONAC lifting inserts. Users should engineer all rigging plans and other pertinent design information in accordance with their own engineering requirements and expertise.

## Load Factors

Several factors in the rigging process can influence the ultimate load of the insert when lifted in practice, including but not limited to those delineated below. These include the role of the rigging angle, potential dynamic impact during lifting, the relationship between tension and shear forces, and the placement of lifting points. Although they are not directly related to the rigging setup, other factors such as concrete strength and proper reinforcement are also critical to achieving the safe working load, and must be taken into account in calculations during the design phase.

## Sling Angle

For tension pressures in CONAC lifting inserts, the amount of load applied to the anchor is heavily influenced by the sling angles used. For example, at a 90° angle, where the sling is directly perpendicular to the product surface, no load magnification is applied (the load remains at a factor of 1.0), at a 60° angle, where the distance between lifting points is equal to the distance between the hook and the product surface, the load is magnified at a factor of approximately 1.16, and at a 45° angle, where the difference between lifting points is double the distance between the hook and the product surface, the load is magnified at a factor of approximately 1.42.



SLING ANGLE LOAD FACTOR					
Sling Angle (SA)	90°	75°	60°	45°	30°
Load Factor (LF)	1	1.04	1.15	1.42	2

Note: Conac recommends a sling angle of 60° or greater and strongly discourages sling angles below 45°.

## Dynamic Load

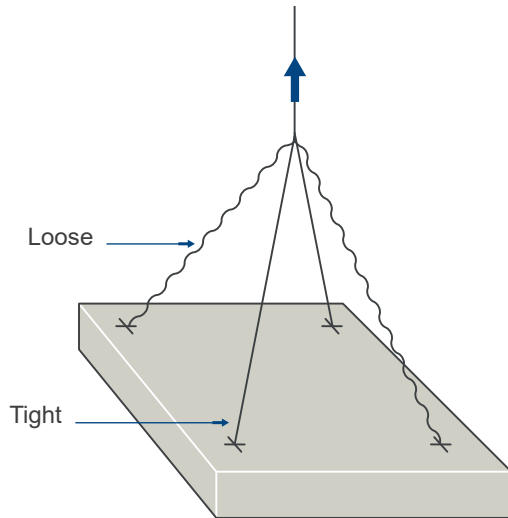
When a rapid change in applied force occurs during the lifting process, such as when the product is being transported over rough ground or undergoes an accelerative incident, the load applied to the lifting insert will be magnified considerably. CONAC encourages all customers to minimize the risk of dynamic load during the lifting process and calculate the load impact of any potential dynamic load.



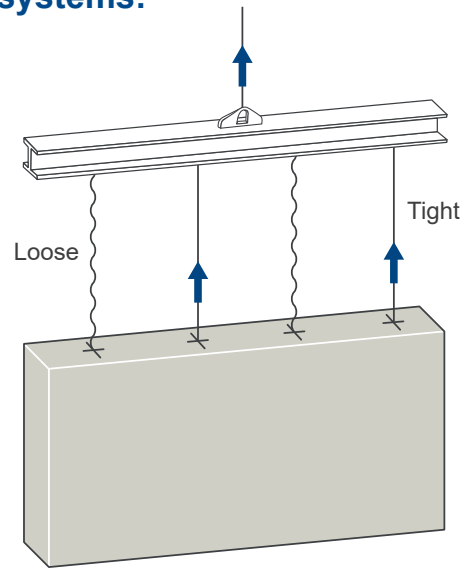
## Statical Determination in Lifting Systems

When designing the rigging configuration, it is crucial to take into account what effect the lifting points will have on its load distribution. A statically determinate lifting system is one in which the load is distributed equally to all lifting points. A lifting system is statically indeterminate if the load cannot be distributed equally to all lifting points. This generally occurs when using a beam with more than 2 lifting points or when lifting a panel with more than 3 lifting points. Symmetrical arrangement of the lifting points will not alter this due to the impossibility of installing the anchors with the required precision, and the individual sling legs will never be of exactly equivalent length.

### Examples of statically indeterminate lifting systems:



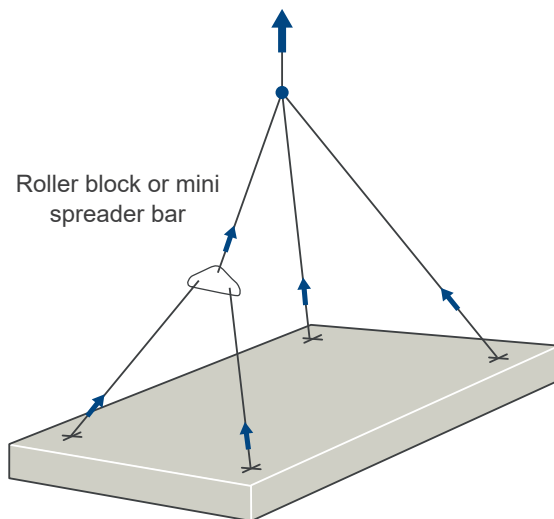
Only 2 legs carry the load



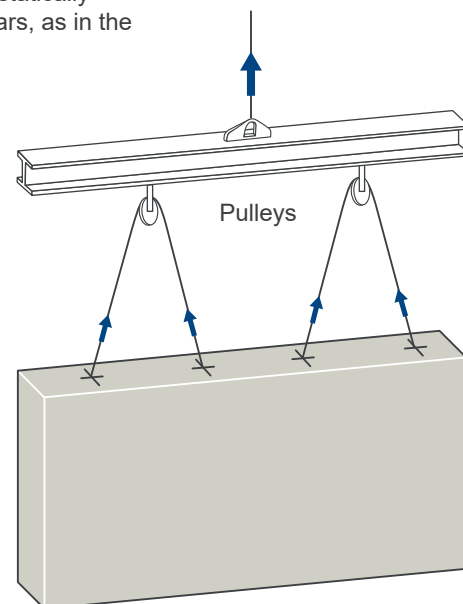
Only 2 legs carry the load

## Statically Determinate Lifting Systems

It is also possible to convert statically indeterminate lifting systems into statically determinate lifting systems by using pulleys, roller blocks or spreader bars, as in the following examples.



All 4 legs carry the load

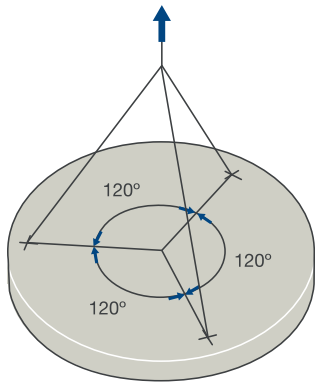


All 4 legs carry the load

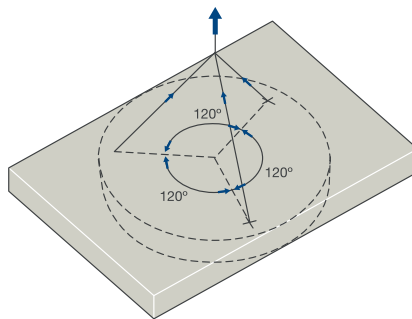
## Statically Determinate Lifting Systems – 3 Legged Slings

A three legged sling system with approximately equal leg length and pick points evenly distributed at 120° in a circle around a precast products center of gravity will be statically determinate for products such as circular structures, manholes, and rectangular slabs where the length is less than twice the width.

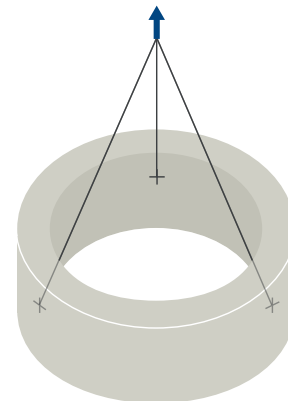
### Examples of statically determinate lifting systems:



All 3 legs carry the load

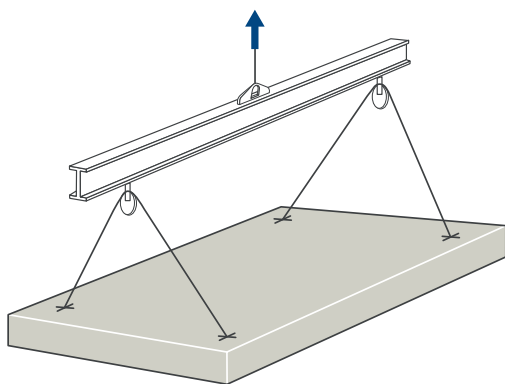


All 3 legs carry the load

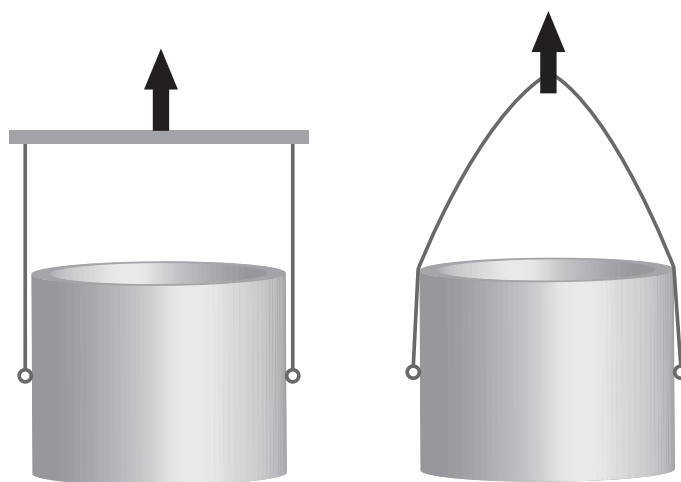


All 3 legs carry the load

### Other statically determinate lifting systems

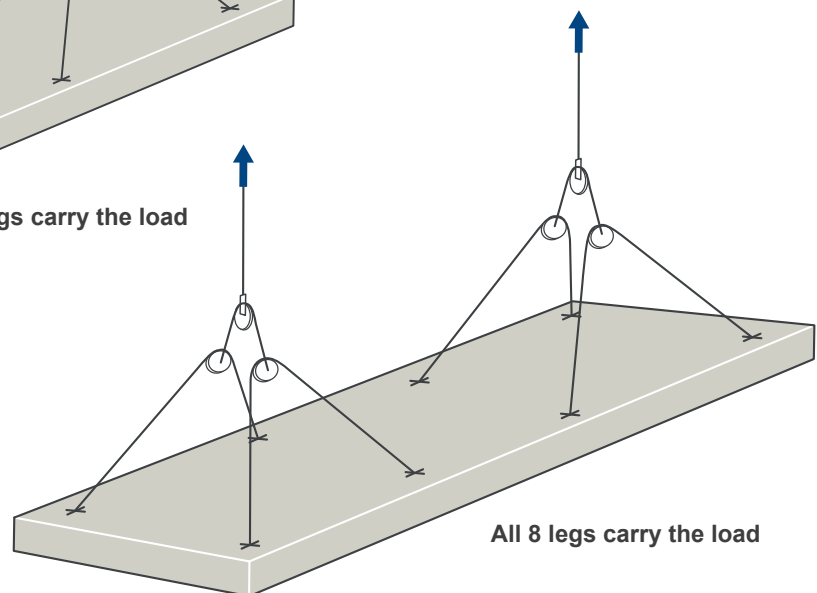
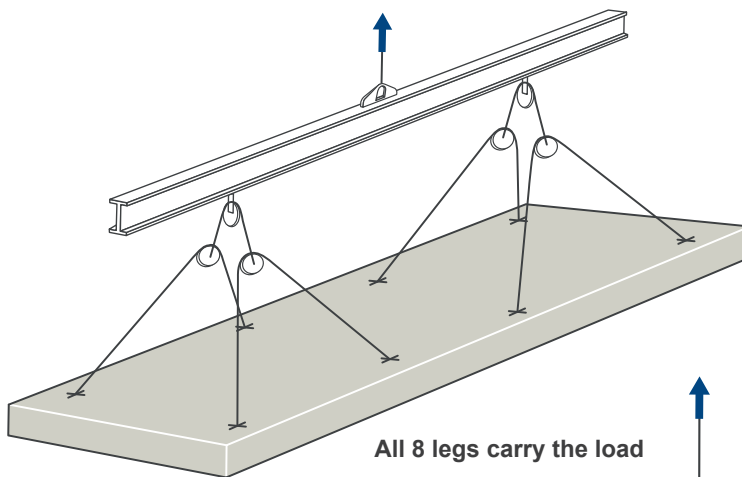
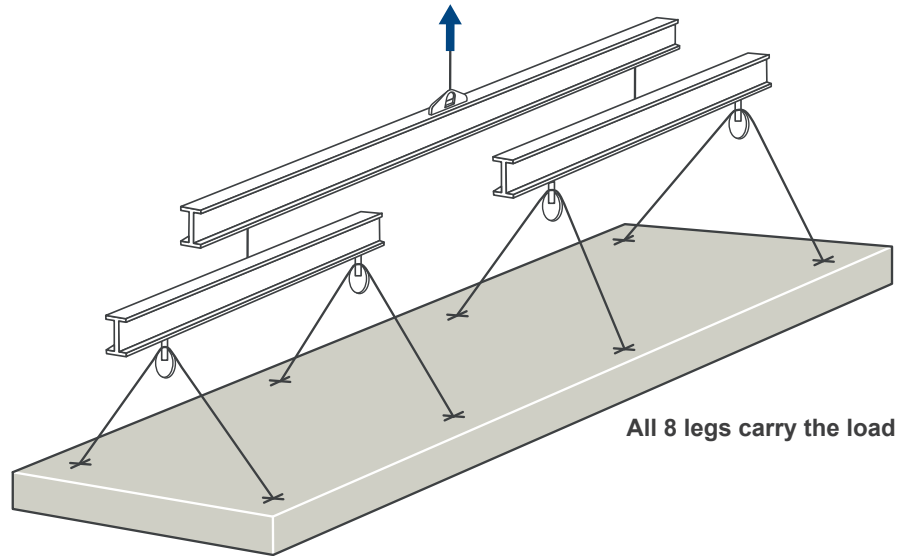


Four-point pick with simple lifting beam  
All four legs carry the load  
(ensure legs of 2-way slings are approximately equal)



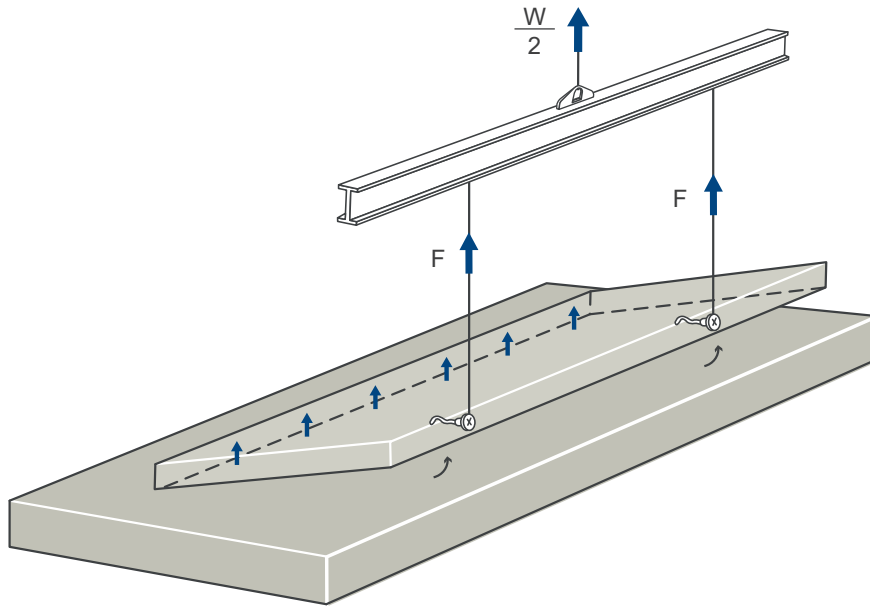
## Large Panels With Eight-Point Pick

Due to the increased complexity, utilizing eight-point lifting systems effectively and safely will always require a detailed engineering analysis factoring in stresses in the precast panel as well as the load distribution in the lifting system. Several examples of eight-point pick systems are shown below.

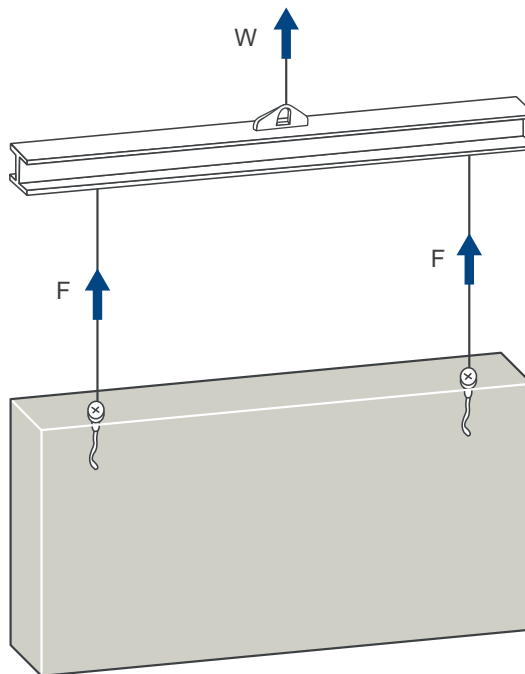


## Transverse Shear Forces

Transverse shear forces result when rotating a wall panel from the horizontal position to the vertical position, using lifting anchors in the edge of the panel. Since one side of the panel is still supported by the ground (or casting bed or trailer), only half of the panel weight has to be lifted until the panel is in the vertical position.



After this, the entire panel weight has to be taken into account in tension.



## Terms and Conditions of Sale

---

PLEASE READ THE FOLLOWING TERMS AND CONDITIONS CAREFULLY BEFORE USING CONAC PRODUCTS.

The information contained in this handbook relates to product use within the Precast / Prestressed concrete industry and is considered accurate. However, no express or implied warranty is made regarding the accuracy of this information, or the results to be obtained from the use thereof. User shall determine beforehand the suitability of a product for the intended application, and will assume all risk and liability in connection therewith. CONAC reserves the right to change the design of products, or their rated loads at any time.

It is the responsibility of the user to check supplied products prior to use. Any product believed to be defective should be returned to CONAC for inspection. CONAC will refund the purchase price or replace, at its election, any product which it finds to be defective, provided the product has been used properly. Such refund or replacement shall be the exclusive remedy available, and CONAC hereby disclaims any and all express or implied warranties, and excludes any liability for consequential damages, in accordance with Article 2-719 of the Uniform Commercial Code.

Returned materials will not be accepted without prior approval from the management of CONAC. Upon approval, such returned materials must be shipped freight prepaid, and will be subject to a 20% restocking fee. Our prices do not include sales tax or freight charges. All shipments, unless otherwise agreed are FOB shipping point.

Prices, specifications, and images are subject to change without notice. Some of the illustrations may not represent the actual items exactly. CONAC is not responsible for typographical or illustrative errors.

CONAC requires a minimum purchase of \$250 per order. All purchases under \$250 are subject to a \$50 service charge.

Orders placed after 4:00 PM ET will be shipped the next business day. All online orders are subject to review and approval process.

Questions about your order? Call 800-336-2598 or email [sales@conacweb.com](mailto:sales@conacweb.com).

# Notes



A series of horizontal lines for taking notes, starting from the top of the page and extending down to just above the footer.