OLYMPIC PANEL Products

Products

MultiPour® Plus	Basic HDO
MultiPour® HDO	B-Matte™ 333 MDO
Classic HDO	Basic MDO

Basic HDO Form

Basic HDO Form is designed to balance initial cost, multiple reuse and concrete appearance. Basic HDO Form is an economical plywood panel for concrete forming applications where the superior surface uniformity and higher reuse of OPP's Classic HDO or MultiPour HDO is not needed.

Basic HDO Form delivers a tough, abrasion resistant surface with standard alkalinity resistance to provide cost effective multiple reuses.

General Specifications

Width: 4' only
Length: 8' only
Thicknesses: 1/2", 5/8" - 5 ply; 3/4" - 7 ply
Working Surface: Yellow/buff colored high density phenolic resin impregnated cellulose sheet (HDO). Available with one working surface only.
Back Surface: HDO backer sheet for balance and moisture resistance.

B-Matte™ 333

B-Matte™ 333 features an advanced overlay that provides a superior matte finish and delivers seven times more alkalinity resistance than standard MDOs.

B-Matte™ 333 is a workhorse concrete forming panle designed to deliver a smooth matte concrete surface.

General Specifications

Width: 4' & 2' standard
Length: 8' standard; 10' available
Thicknesses: 5/8" - 5 ply and 7 ply; 3/4" - 7 ply; 1-1/8" - 11 ply
Working Surface: Medium density phenolic resin impregnated cellulose sheet (MDO).
One working surface standard. 2-side available.

B-Matte™ 333 Load Span Tables – Basic HDO

Load Span Tables – Wet Conditions
Recom. Max. psf on Class 1 Panels or Equivalent (V412)

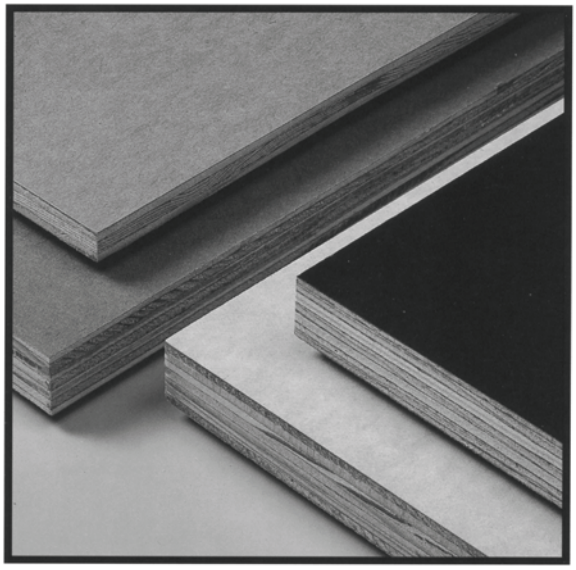
Face Grain *Perpendicular* to Supports*

Support Spacing	Plywood Thickness - Allowable Pressure (psf)							
	1/2"		5/8"		3/4"		1-1/8"	
	l/360	l/270	l/360	l/270	l/360	l/270	l/360	l/270
8"	1000	1000	1320	1320	1580	1580	2230	2230
12"	455	495	710	710	885	885	1380	1380
16"	195	260	325	400	445	505	1000	1000
19.2"	110	150	190	255	270	350	740	820
24"	–	–	100	130	145	190	425	530

Face Grain *Parallel* to Supports*

Support Spacing	Plywood Thickness - Allowable Pressure (psf)							
	1/2"		5/8"		3/4"		1-1/8"	
	l/360	l/270	l/360	l/270	l/360	l/270	l/360	l/270
8"	392	434	747	747	1175	1175	1819	1819
12"	145	167	409	466	596	648	1167	1167
16"	–	–	167	213	273	364	749	749
19.2"	–	–	121	163	194	216	404	448
24"	–	–	–	–	100	135	241	289

* Plywood continuous across two or more spans. These are total loads (weight of panel should be considered in horizontal applications).



HDO/MDO PLYWOOD

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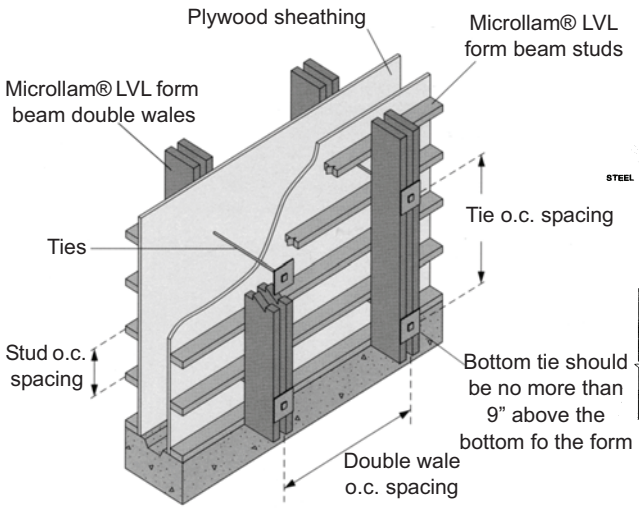
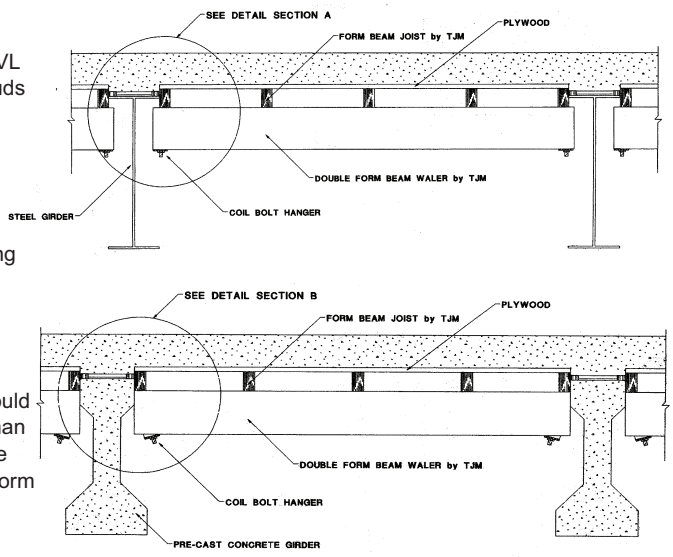
FAX 816-525-4533

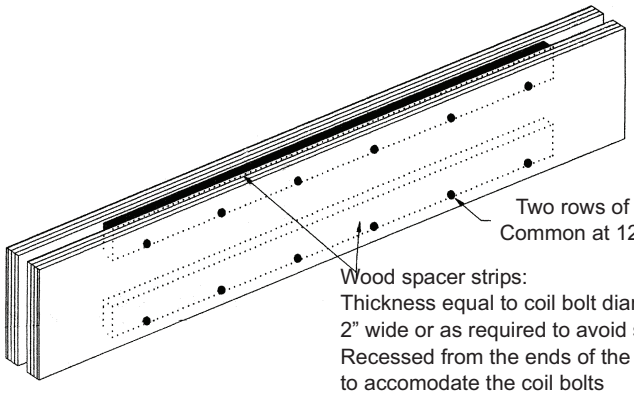
Microllam® LVL Concrete Form Beam

Typical Wall Form Assembly



Typical Bridge Deck Formwork Systems



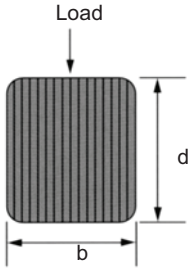


2.0E Microllam® Lvl Form Beams[4]

Allowable Design Stresses
(Dry Use, 100% Load Duration)

Shear modulus of elasticity	$G = 125{,}000$
Modulus of elasticity	$E = 2.0 \times 10^6$ PSI
Fexural stress	$F_b = 2750$ PSI[1]
Compression perpendicular to grain parallel to glue line	$F_{Cl} = 750$ PSI[2][3]
Compression parallel to grain	$F_{Cl} = 2635$ PSI
Horizontal shear perpendicular to glue line	$F_v = 285$ PSI

3-1/2" x 3-1/2"	2-1/2" x 3-1/2"	2-1/2" x 5-1/2"
V_{allow} = 1746 lbs.	V_{allow} = 1870 lbs.	V_{allow} = 2939 lbs.
M_{allow} = 2178 ft.-lbs.	M_{allow} = 1556 ft.-lbs.	M_{allow} = 3613 ft.-lbs.
EI = 22509 k-sq. in.	EI = 16078 k-sq. in.	EI = 62391 k-sq. in.
b = 3.5"	b = 2.5"	b = 2.5"
d = 3.5"	d = 3.5"	d= 5.5"



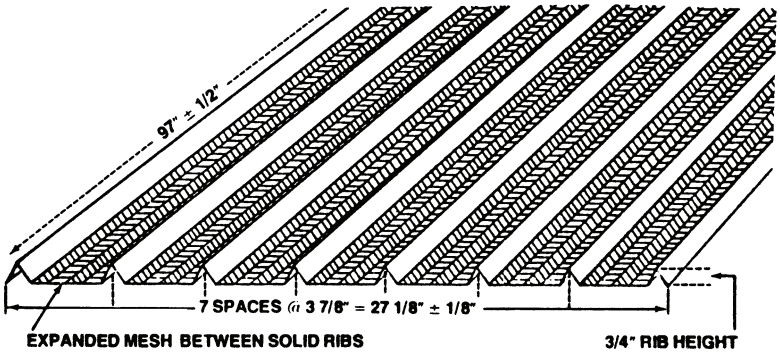
(1) For 12" depth. For others, multiply by $[12/d]^{0.136}$

(2) F_{cl} shall not be increased for duration of load

(3) F_{cl} = 880 PSI for thicknesses greater than 1-3/4"

(4) Values are for new or like-new product

AMICO STAY-FORM®

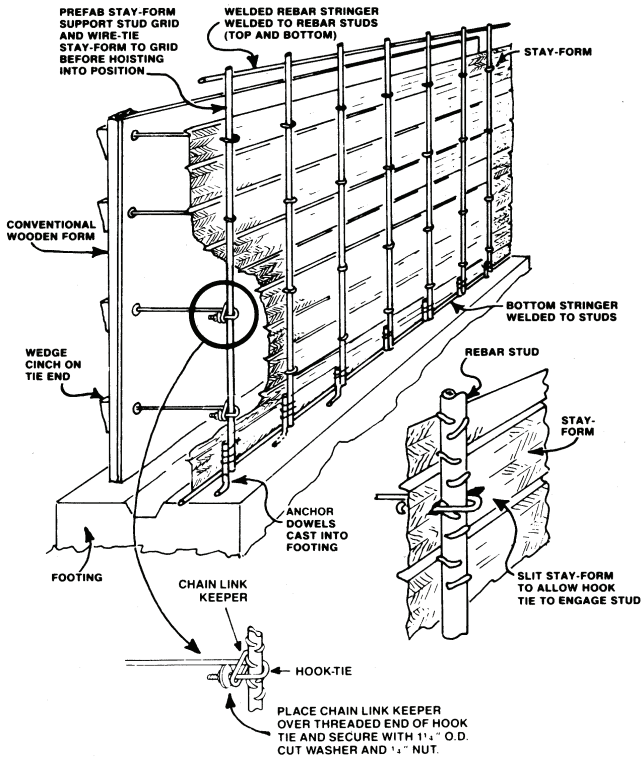


Stay-Form is manufactured from hot-dipped galvanized sheet steel.

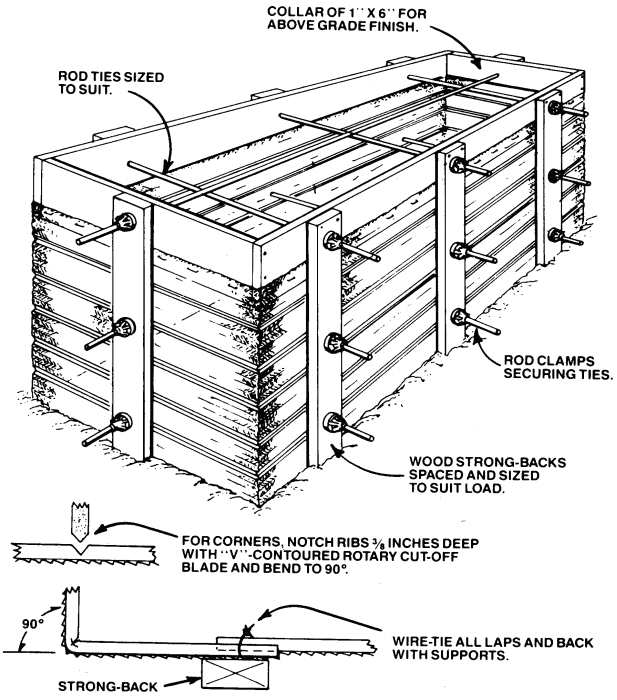
26 ga. Standard Grade
25 ga. Heavy Grade
Sheet Size 27” x 97”

- Reduces labor cost in difficult forming applications.
- Joint scrabbling is eliminated in most cases.
- Eighty percent labor savings in stripping.
- Easy rebar and service conduit penetration.
- Continuous placement of rebar.
- Visual inspection of the pour.
- Easy formulation to fit curvatures.
- Reduces grade removal for below-ground use.
- Cut to size in multiples with power saw using abrasive blades.
- Does not require special formulation of concrete.

Forming Blind-Side Walls



Forming Pile Caps



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Sonotube Fibre Forms

Sonotube Fibre Form "A" Coated

The original form, made from many layers of tough, high-quality firbre spirally wound and laminated with a water resistant adhesives.

Produces a column with spiral seams.

Seamless Sonotube

A mid grade form with a specially finished inner ply.

Minimizes but does not completely eliminate the spiral seam appearance.

Sonotube Plus

Fitted with a plastic liner that imparts a smoother architectural finish to round columns.

One vertical seam on columns up to 24 inch diameter and only 2 vertical seams or columns over 24 inch diameter.

Premium Sonotube Fibre Forms

This is a new product that is uniquely designed and coated inside.

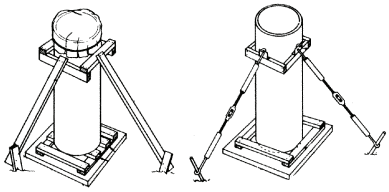
Virtually eliminates the spiral seams and ridges.

Placing

A tremie pipe should be used in the pouring operation. National average pour rate is 15 feet per hour, but **not to exceed 3000 PSF**. The concrete can be vibrated as required, but use care to prevent vibrator from damaging tube. A release agent must always be used with Seamless Sonotube forms and will facilitate stripping if used with "A" Coated Forms.

Stripping

Strip form as soon as possible after concrete has set. Recommended time is 24 to 48 hours, and should not exceed 5 days. Use saw or knife to make vertical cuts and remove form.



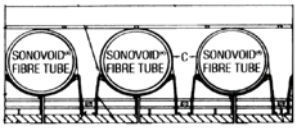
Bracing

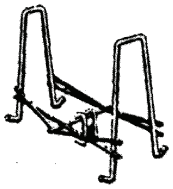
Sonotube forms are easily brought to plumb, and only minimal bracing is required (brace tuve every 8 feet). Use plastic brace plates, scaffolding or lumber.

Sonovoid Fibre Tubes

Sonovoid Fibre Tubes are laminated tubular forms specifically developed to provide an economical means of forming voids in precast or cast-in place concrete slabs. Typical end closures are metal up to 12 inch diameter and wood thereafter.

Sonovoid O.D.	Maximum Support Spacing	Maximum Spacing Between Hold Down
2.25 to 18.00	4' O.C.	18" from end of tube, then every 4'
18.7 to 22.85	3' O.C.	18" from end of tube, then every 3'
24.85 to 36.9	2' O.C.	12" from end of tube, then every 2'



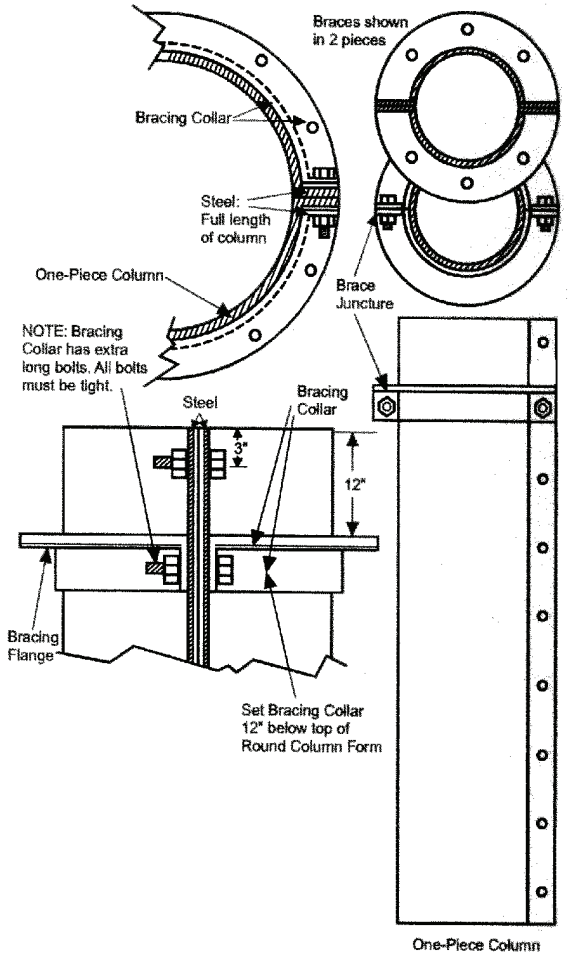


Support

One-Piece Round Column Forms

An economical method for producing beautiful concrete

- Lightweight. Easy handling and placement.
- Produce beautiful, clean, smooth concrete.
- Easy to strip.
- Are designed to be reused repeatedly.
- Available on a sale or rental basis.
- Weatherproof.
- Units nest. Use less storage and shipping space.
- Complete with bracing collar and “fast” bolts.



Sizes

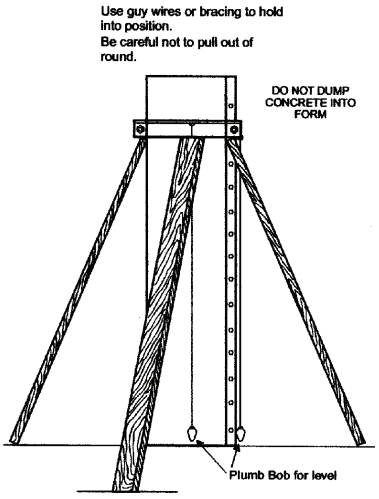
Column Diameter	Length Up To	Approx. Wt. Per Lineal Ft.	Approx. Vol. of Concrete Per Lineal Ft.
12”	20’	9.9 lbs.	.8 cu. ft.
14”	20’	10.0 lbs.	1.0 cu. ft.
16”	20’	11.1 lbs.	1.4 cu. ft.
18”	20’	12.3 lbs.	1.8 cu. ft.
20”	20’	13.1 lbs.	2.2 cu. ft.
22”	20’	14.2 lbs.	2.6 cu. ft.
24”	20’	15.2 lbs.	3.1 cu. ft.
26”	20’	16.2 lbs.	3.6 cu. ft.
28”	20’	17.3 lbs.	4.2 cu. ft.
30”	20’	18.4 lbs.	4.9 cu. ft.
32”	20’	19.5 lbs.	5.5 cu. ft.
34”	20’	20.5 lbs.	6.3 cu. ft.
36”	20’	21.5 lbs.	7.0 cu. ft.
38”	20’	22.6 lbs.	7.9 cu. ft.
40”	20’	23.7 lbs.	8.7 cu. ft.
42”	20’	24.8 lbs.	9.6 cu. ft.
44”	20’	25.8 lbs.	10.6 cu. ft.
46”	20’	26.8 lbs.	11.5 cu. ft.
48”	20’	27.9 lbs.	12.6 cu. ft.

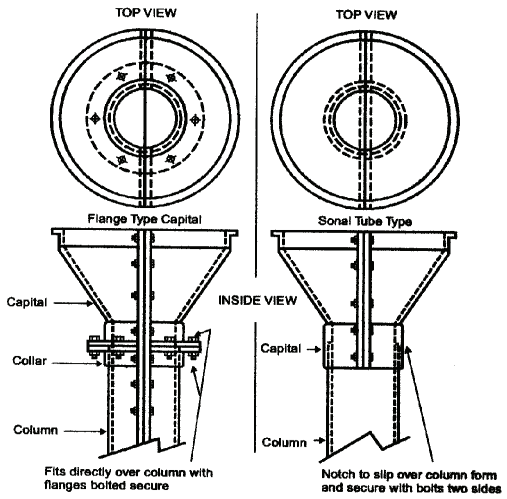
MAXIMUM LATERAL PRESSURE FOR MFG ROUND COLUMN FORMS: It is recommended that maximum lateral pressure should not exceed 2,250 psf.

MAXIMUM RATE OF POUR: Based on Table 5-5, page 5-13, Formwork For Concrete Fifth edition, Maximum Rate Of Pour would be:

At 90°F:	20 feet per hour
At 80°F:	18 feet per hour
At 70°F:	16 feet per hour
At 60°F:	14 feet per hour
At 50°F:	11 feet per hour
At 40°F:	9 feet per hour

Applies only for normal weight concrete made with Type 1 cement, no admixtures or pozzolans, slump no more than 4 inches, and vibration depth limited to 4 feet or less.





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Heavy-Duty Steel Column Form

Deslauriers heavy-duty steel column forms develop an exceptionally smooth, hard surface remarkably free of voids and with a minimum number of indistinct seams.

• All standard column diameters from 14” to 60”.

• Standard column lengths are 8’ 0”, 4’ 0”, 2’ 0” and 1’ 0”.

• You can eliminate form inventory and keep working capital available by leasing Deslauriers heavy-duty forms when needed.

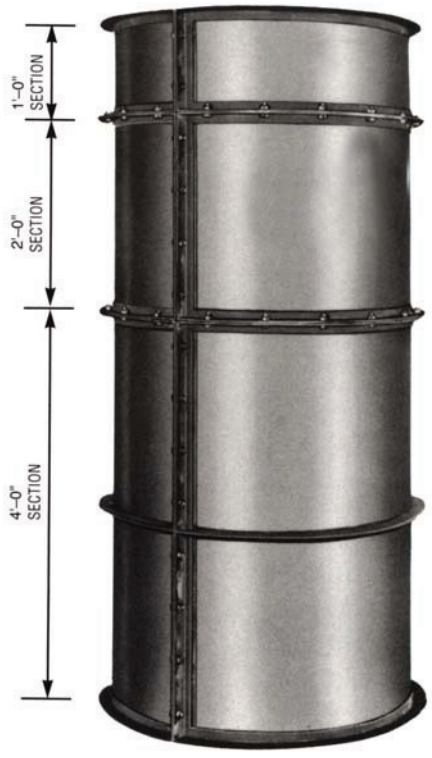
• FORM DESIGN 3000 PSF ON FORMS THROUGH 36” DIAMETER OR 2000 PSF ON FORMS OVER 36” DIAMETER.

Forms are galvanized constant radius steel half round sections and quarter round sections (for forms over 48” in diameter) bolted into units for crane handling on the jobsite. Each component is framed with flange angles die-cut and punched for accurate flush butt joints without protrusion on the contact surface. Vertical and horizontal seams, opened and closed with each pour, are connected with high-speed bolts to speed setting and stripping. Curing time permitting, one column per form can be produced each working day.

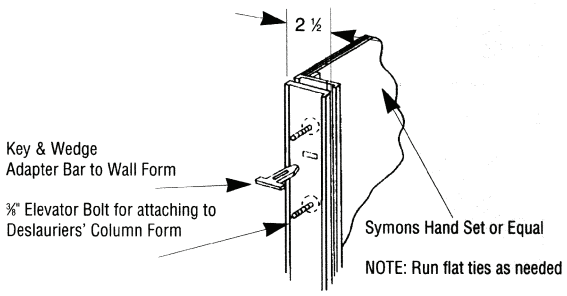
LATERAL PRESSURE SHOULD NOT EXCEED 3000 PSF ON FORMS THROUGH 36” DIAMETER OR 2000 PSF ON FORMS OVER 36” DIAMETER

Maximum rate of pour is based on ACI SP-4 4th edition.

Temperature °F	Ft. Per Hour	
	F2000PSF	F3000PSF
40	8	13
50	10	16
60	12	20
70	14	24
80	16	26
90	18	30

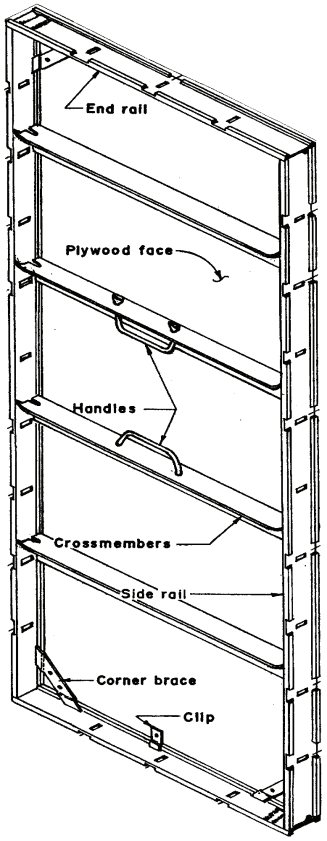


Deslauriers’ Adapter Bar



UNI-PLY

Quick Assembly · Lightweight · Easy to Maintain and Reuse



1000 PSF SYSTEM

Exact corner joints eliminate tolerance build-up over large areas.

Available in 100/30 or 120/120 1/2" plywood is riveted to the angle struts. Plywood tolerance is closely maintained to assure long form life. With our premium birch plywood, contractors can expect up to 200 reuses before plywood replacement.

Side and end rails are rolled from 55,000 PSI steel and welded continuously at corners for maximum strength.

Angle struts are space on 12" centers to provide strength, uniform concrete and minimize deflection.

Handles are provided on panels for easy handling in setting and stripping forms.

2" wide angle strut provides greatest frame and plywood strength on the market.

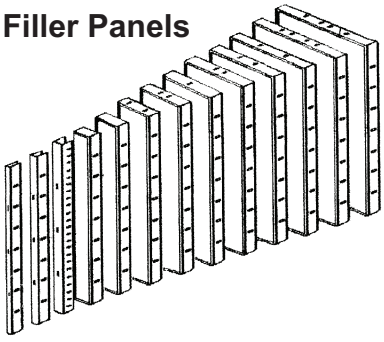
Dado slots on face of form allow tie spacing at 12" on center. Rear-side and end-rail dados are located at 6" on center to allow optimum accessory location. Front and rear-side rail contact points prevent grout seepage and permit true form alignment with adjacent panels.

ALL MATERIALS AND MANUFACTURING MADE IN USA

BASIC PANEL AND FILLER SIZES:

Panels: 24" W x 3', 4', 5', 6', 8', 9' or 10' H
Filters 4" to 22" W x 3', 4', 5', 6', 8', 9' or 10' H
Metal Fillers: 1", 1.5" & 2" W x 3', 4', 5', 6', 8', 9' or 10' H
Inside Corner (metal): 6" x 6" & 4" x 4" x 3', 4', 5', 6', 8', 9' or 10' H
Outside Corner: 3', 4', 5', 6', 8', 9' or 10' H
Filler Angles: 3', 4', 5', 6', 8', 9' or 10' H
Pilaster Panels: 3', 4', 5', 6', 8', 9' or 10' H
Culvert Forms: 3', 4', 5', 6', 8', 9' or 10' H
Inside & Outside Bay Corners: 3', 4', 5', 6', 8', 9' or 10' H
Hinge Corners: 3', 4', 5', 6', 8', 9' or 10' H

Filler Panels



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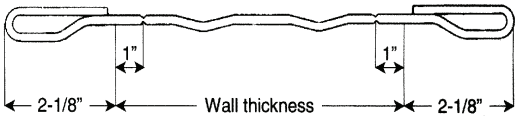
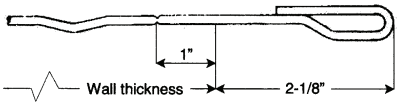
UNI-PLY

LOOP TIE – STANDARD & HEAVY DUTY

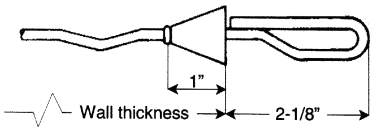


GANG LOOP TIE – STD. & HEAVY DUTY



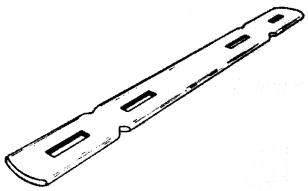
Capacity	Wire Size	SWL (lbs.)
STD.	.225	2550
HD	.243	3000

Safety Factor 2:1



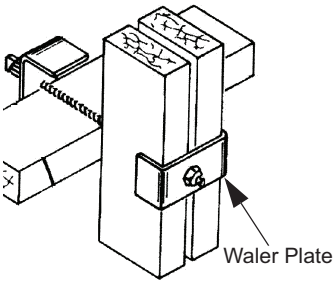
Also available with 1" x 1" plastic cone

"X" FLAT TIES

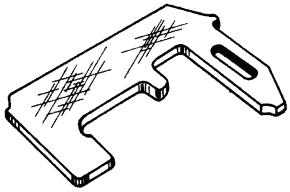


Capacity	SWL (lbs.)
STD.	3000
HD	3375

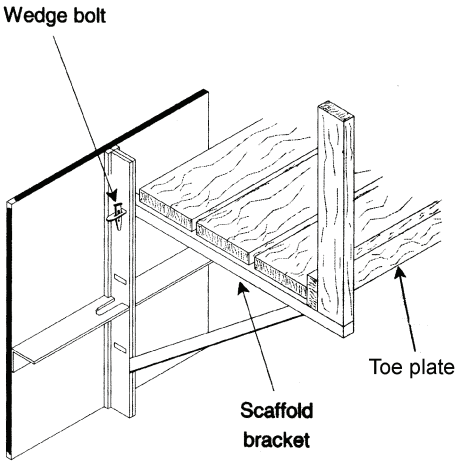
Safety Factor 2:1



GANG FORM BOLT

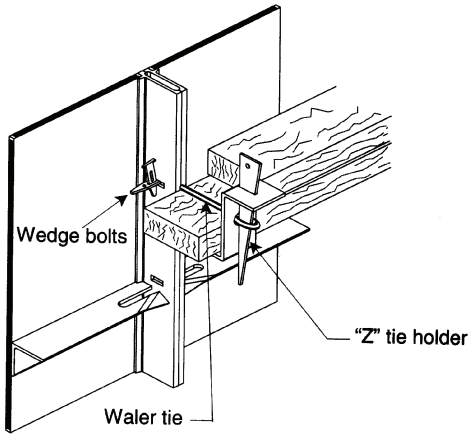


SCAFFOLD BRACKETS

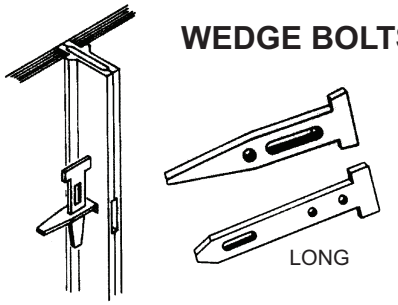


This Scaffold bracket is designed for worker access only and has a rating of 500 lbs. The maximum spacing is 8 ft. on center.

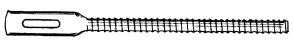
"Z" TIE HOLDER



WEDGE BOLTS



PLY-LAG



WALER TIE

RJD Industries, Inc.

SuperTie
Fiberglass formtie systems

Fiberglass Formtie Systems
Light (6000 lbs.) and Medium (15,000 lbs.) Systems

Saves Labor! Cuts Cost in a Snap!
Provides Superior Finishes!

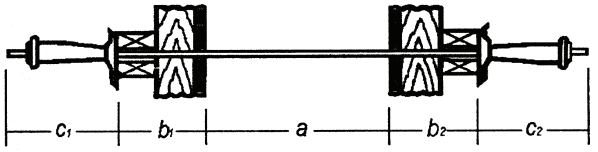
Rod, Gripper and Wedge – The basic components of the Light (6000 lbs.) and Medium (15,000 lbs.) SuperTie Systems.

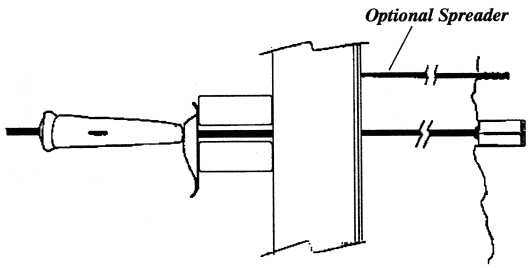
Setup

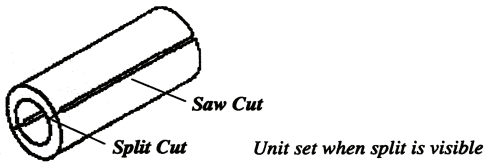
1. Cut fiberglass rod to length required, using abrasive blade in a circular saw. Length of rod is width of structure (a) plus width of forms ($b + b_2$) plus 16 inches ($c_1 + c_2$). Use 18" for Medium system.

The SuperTie Fiberglass Formtie Systems are used to secure concrete formwork during concrete placement and initial hydrations with a formtie system which would not have the inherent limitations of previously popular steel formtie systems. The SuperTie Systems eliminate the possibility of rust stains and deterioration of the structure that is often caused by failure of patching for steel formtie holes.

The SuperTie Systems are appropriate for use in all forming applications, but are especially beneficial in situations such as architectural finishes, since an aesthetically pleasing finish is attained with tremendously reduced labor expenditures. It also reduces costs in battered wall and "odd sized" tie situations, since the rod is cut to the length required at the job site.







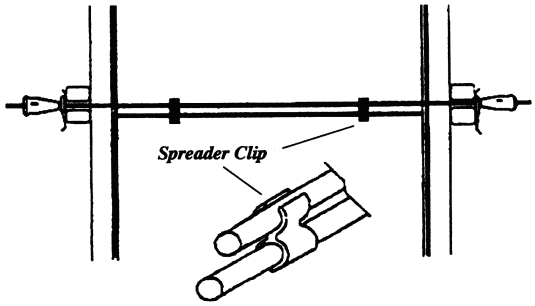


Table 1 – Typical Spacing/Placement Rates

Tie Spacing Data			Rate of Placement at Concrete Temp.			Form Pressure	Actual Load On Tie
Horiz.	Vert.	Area	40°	60°	80°	lbs/sq.ft.	Lbs.
Light – 6,000 Lbs. Ultimate Tensile Strength System							
16"	16"	1.78ft.^{2}	6'9"	10'	10'	1685	3000
24"	12"	2.00ft.^{2}	6'	10'	10'	1500	3000
24"	16"	2.67ft.^{2}	4'4"	6'6"	10'	1123	3000
24"	24"	4.00ft.^{2}	2'8"	4'	6'4"	750	3000
Medium – 15,000 Lbs. Ultimate Tensile Strength System							
30"	24"	5.00ft.^{2}	6'	10'	10'	1500	7500
30"	30"	6.25ft.^{2}	4'8"	7'	10'	1200	7500
30"	36"	7.50ft.^{2}	3'9"	5'8"	9'	1000	7500
30"	36"	9.00ft.^{2}	3'	4'6"	6'	833	7500

Note: It is the responsibility of the contractor to control concrete mix design and concrete placement to assure that the maximum allowable form and form tie design loads are not exceeded.

SuperTie has an ultimate tensile strength of 6000 lbs.; the ACI's recommended 2:1 safety factor advises safe working load of 3000 lbs. SuperTie XV has an ultimate tensile strength of 15,000 pounds, swl is 750 lbs. at 2:1.

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LOCAL 816-525-3640
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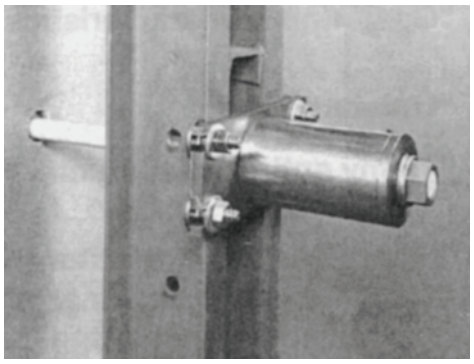
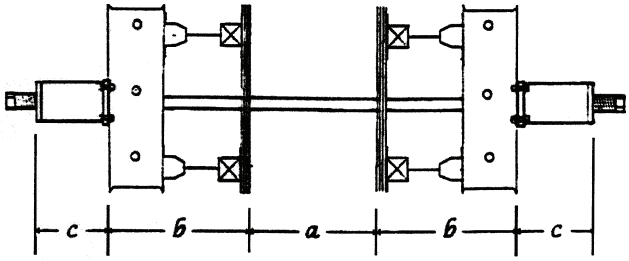
RJD Industries, Inc.

SuperTie
Fiberglass formtie systems

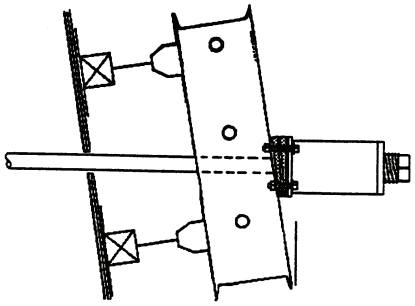
Fiberglass Formtie Systems
Heavy (50,000 lbs.) Systems



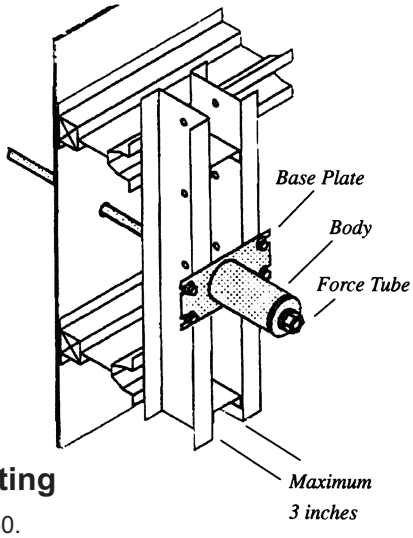
Supertie 50K, a 50,000 lbs (ultimate tensile strength) system, mounted on commercially available form.

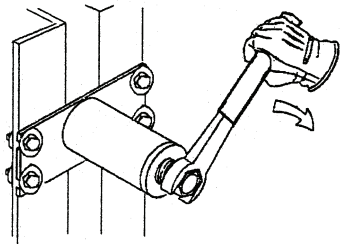


Length of rod equals width of structure (a), plus width of forms (b), plus 12" for the Grippers (c). Add an additional 6 inches to one side if JD50K Jacking Device is to be used.



Mounting of Gripper on battered wall form (with Grippers mounted horizontal). Use one shim for each 3 ° of batter.





Turn clockwise to engage locking mechanism using a "cheater bar" to apply 125 to 200 ft. lbs. of force to the Force Tube ("good and snug").

Note: The Base Plate must be securely attached to the formwork. As concrete is placed, the Force Tubes will become loose. Do not re-tighten.

4.5 – Synopsis of Certified Testing

Meets requirements of ACI 303, 347 and 350.

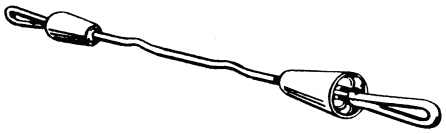
4.5.1 – Tensile, Shear and Elongation

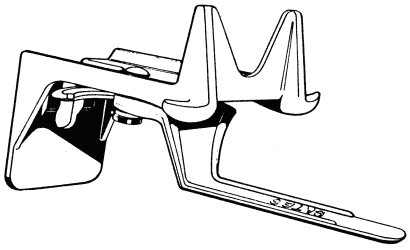
Testing Agency – Smith-Emery Company, Los Angeles, California
Testing Agency – Twining Laboratories, Long Beach, California
Testing Criteria – ACI 347, Formwork for Concrete
Test Stand – Insitu tensile testing of the SuperTie 6000 lbs. ultimate strength system was performed utilizing a standard configuration wood form system consisting of 3/4" sheathing with 2" x 4" strongbacks and wales, and SuperTie Grippers and Wedges. The SuperTie 15,000 and 50,000 lbs. ultimate strength systems were tested utilizing steel plates and SuperTie XV and SuperTie 50K Grippers. Both systems were loaded axially utilizing a calibrated universal testing machine. Shear testing was performed utilizing a fixture to develop single shear.

Test Results

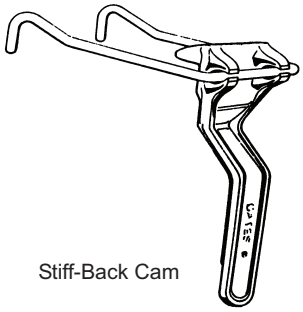
Rod Dia. In.	Average Load Lbs.	Elongation %	Failure Mode	Average Load Lbs.	Failure Mode
.308	7053	0.06	Tensile	3720	Shear
.500	15,590	0.09	Tensile	6700	Shear
1.0	53,193	0.08	Tensile	28,700	Shear

Gates Cam-Lock Forming System

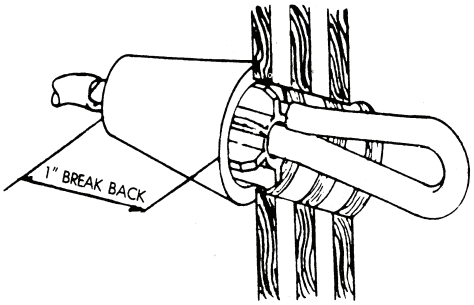




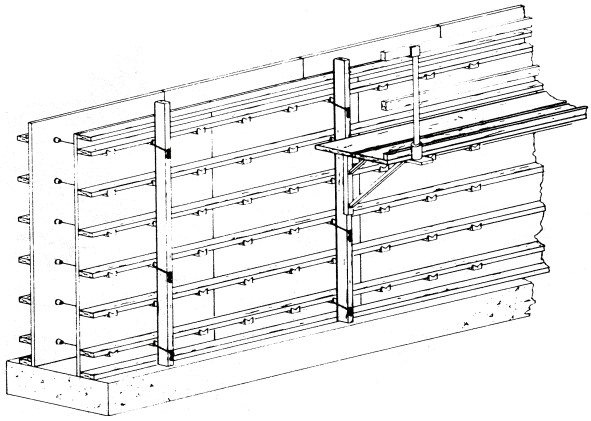
Cam Bracket



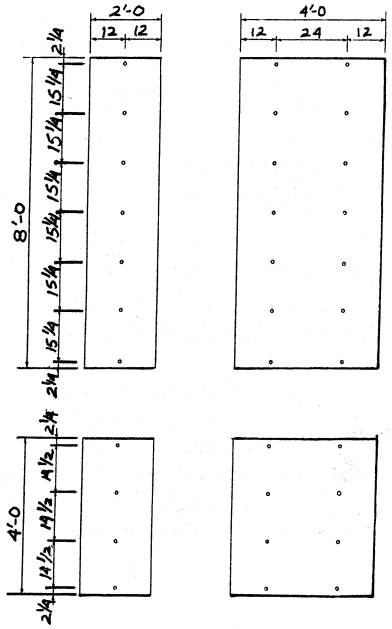
Stiff-Back Cam



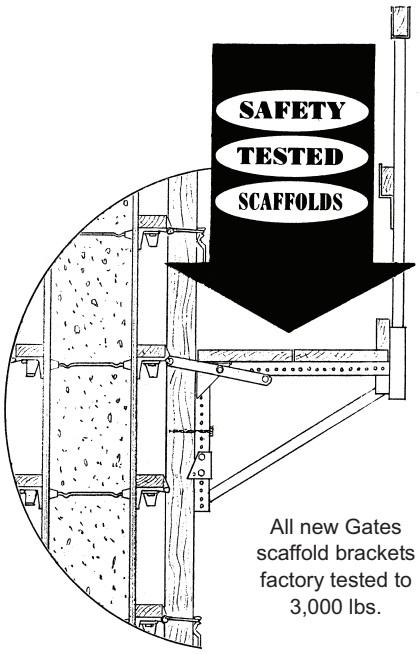
1" dia. cushion cone.
1" break back, self-centering tapered cone for 13/16" hole.



PANEL TIE SPACING



Uses flexible, inexpensive forming materials.
S4S – 2" x 4"s with 4' x 8' x 3/4" plywood sheets.



All new Gates scaffold brackets factory tested to 3,000 lbs.

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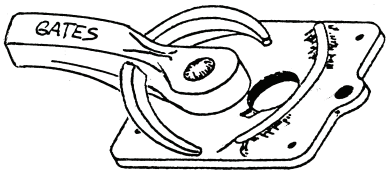
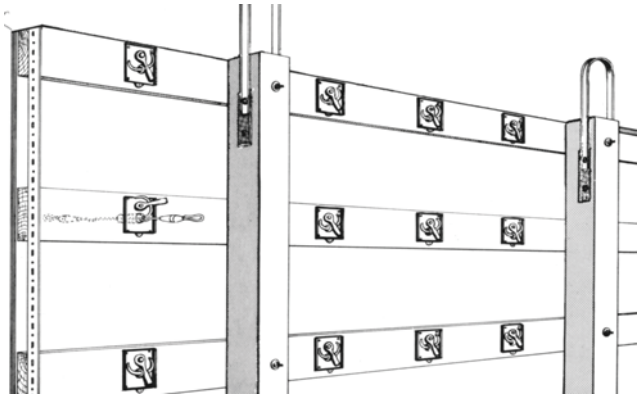
Gates Anchor-Lock Forming System

Advantages of Gang Forming

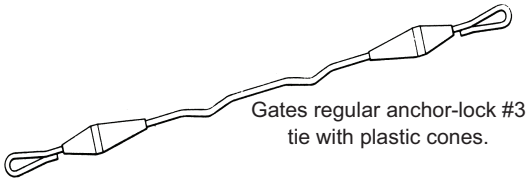
- Lower Construction Costs
- No Loose Hardware
- Gang Form Both Sides
- Pass-Thru Form Ties



#3 Forming System

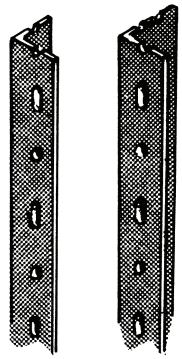


The Gates regular anchor-lock #3 system uses 3/4" plywood with 2 x 6 flat walers on 16" centers, crossed by 4 x 4 stiffbacks on 4'-0" to 8'-0" centers depending on height of gang form. Gates anchor-locks are spaced 24" along the 2 x 6 walers making a tie spacing of 24" x 16" (2-2/3 sq. ft. per tie).



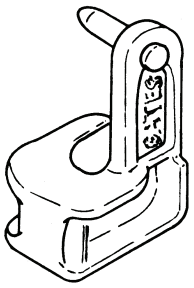
Gates regular anchor-lock #3 tie with plastic cones.

2" x 3" and 2" x 2" x 3/16" angles are bolted with flathead bolts at each end of the gang form. The angles are then locked together with U-clamps for vertical alignment of the two gang forms.



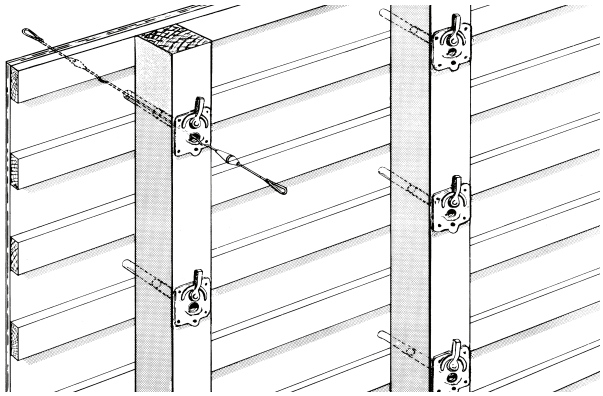
2″ × 2″ Angles

2″ × 3″ Angles

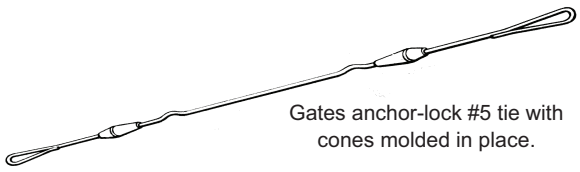


U-Clamp

#5 Forming System



The Gates anchor-lock #5 system uses 3/4" plywood with the 2 x 6 flat walers on 12" centers, crossed by 4 x 4s on 24" centers to minimize the unsupported plywood span. Gates anchor-locks are spaced 24" x 24" (4 sq. ft. per tie.)



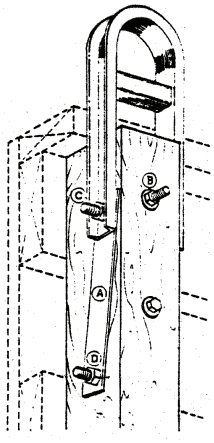
Gates anchor-lock #5 tie with cones molded in place.

Gates Pick-Up Loops must always be used with Extension straps (A) and secured with three bolts (B,C,D) as shown at right.

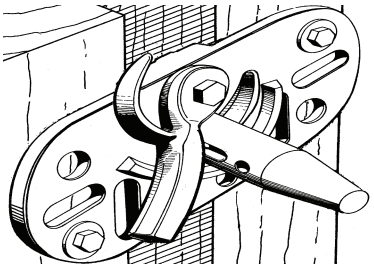
Designed working load not to exceed 2,000 lbs., with a three-to-one safety factor.

Flat Head Bolts

5/16" x 3" 3/8" x 6-1/2"
3/8" x 5-1/2" 3/8" x 8-1/2"



Gates #9 Anchor-Lock Gang Forming



The standard Gates #9 Anchor-Lock Gang Form is made up of four main parts:

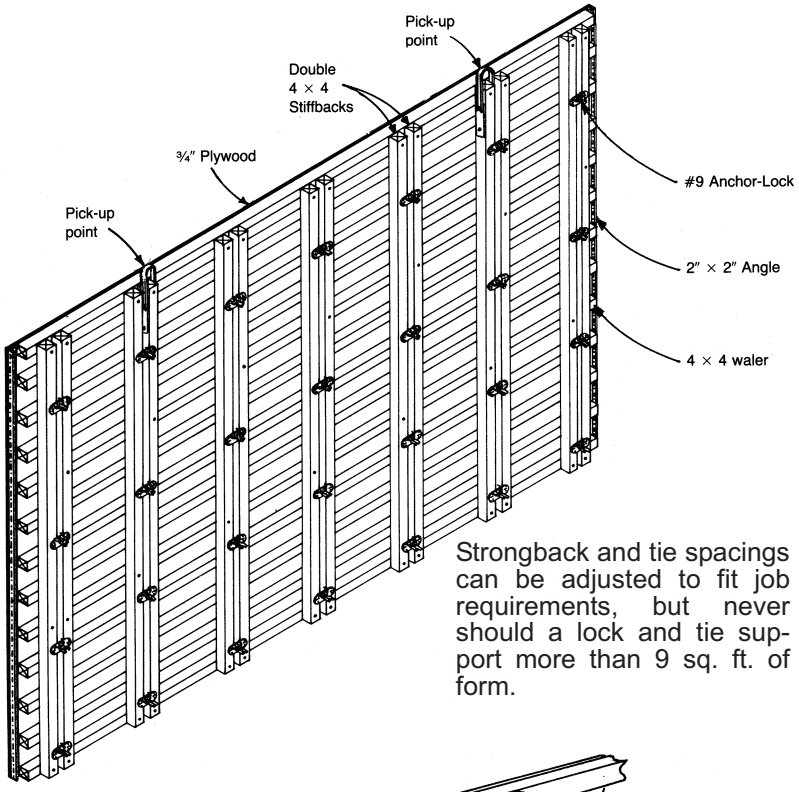
1. 4 x 8 x 3/4" BB grade or plastic-faced plywood panels

2. Horizontal 4 x 4 walers on 12" centers

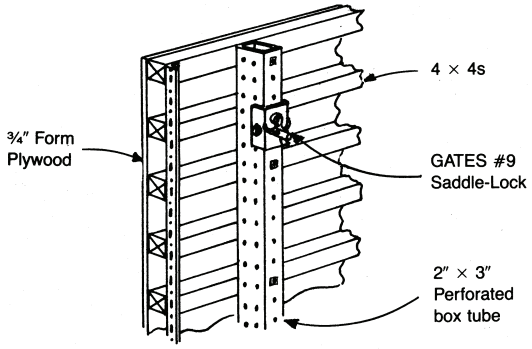
3. Double 4 x 4 strongbacks 1 ft. from each end and then on approximately 3-ft. centers

4. Gates' heavy-duty #9 Anchor-Lock hardware.

By spacing the Anchor-Locks 3-ft. along the vertical strongbacks, a tie pattern of approximately 3 ft. x 3 ft. is obtained. Multiple holes in the face of the Anchor-Lock plate allow for easy lock alignment over the tie holes with lag screws.



Strongback and tie spacings can be adjusted to fit job requirements, but never should a lock and tie support more than 9 sq. ft. of form.

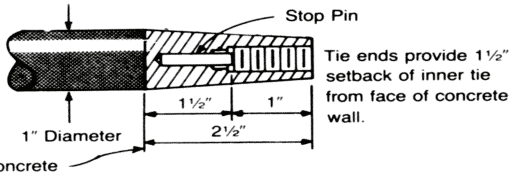


#9 Saddle-Lock & Perforated Box Tube

Tie Combinations

One-piece taper tie with slotted ends to be withdrawn for repeated use. Additional slot for two wall sizes.

'A' Ends



½″ Inner tie, 1″ of thread, each end. Flat anchor near center.

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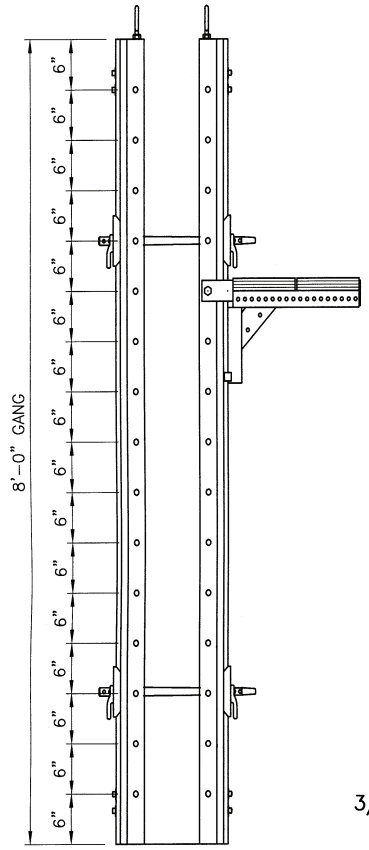
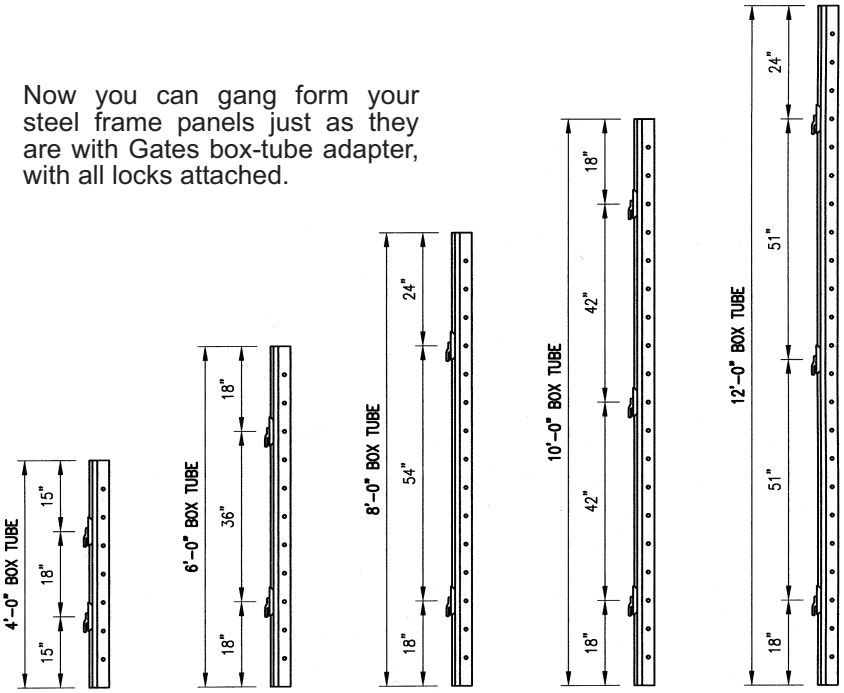
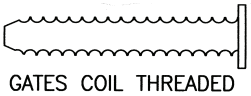
Gates Steel Frame Gang Form Adapter



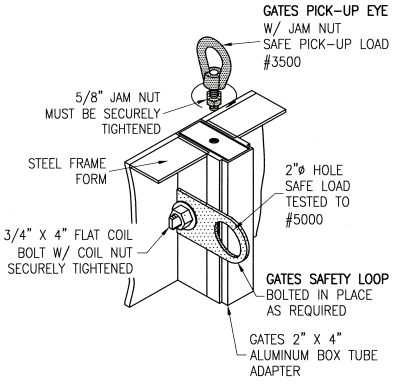
2 Locks on 8'-0" Tubes

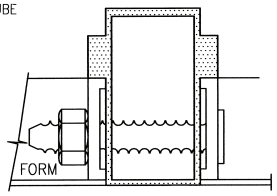
Now you can gang form your steel frame panels just as they are with Gates box-tube adapter, with all locks attached.



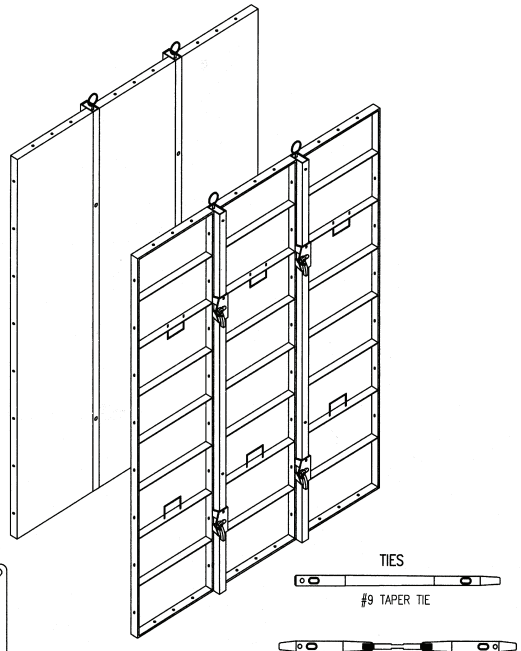


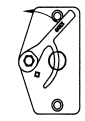
GATES COIL THREADED
3/4" X 4" FLAT CONNECTING
BOLT 1/4" THICK





FOR REPEATED USE WE SUGGEST
3/4" X 4" FLAT COIL BOLTS.

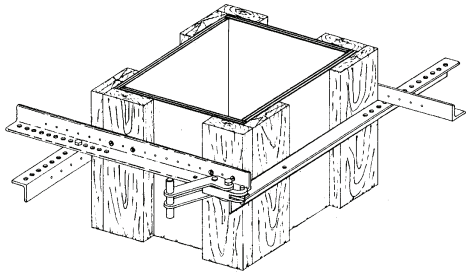




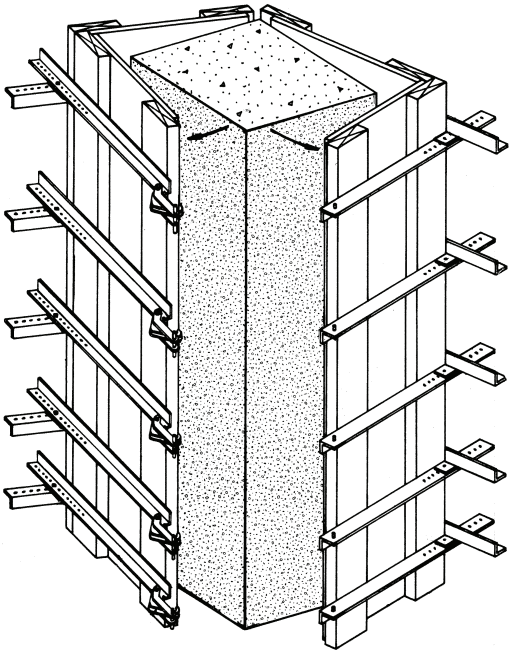
#9 LOCK CLOSED

Isometric of strong-back and steel frame form

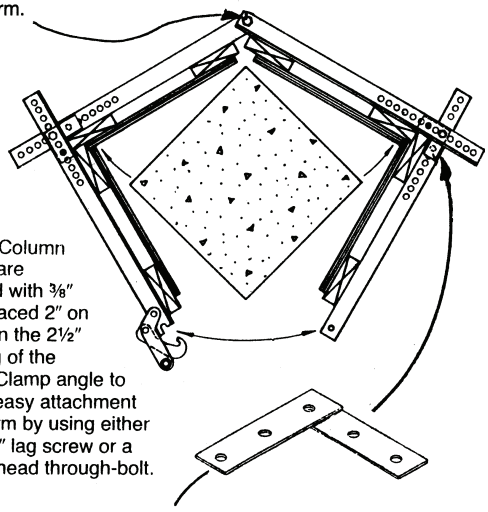
Gates Lok-Fast Column Clamp



- Can be job-built
- Gang formed
- Minimum labor costs
- Designed for rapid placement of concrete
- Rapid locking action
- No loose pieces

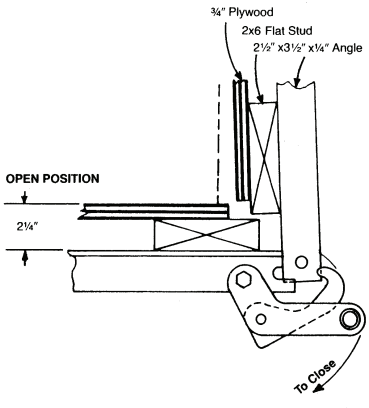


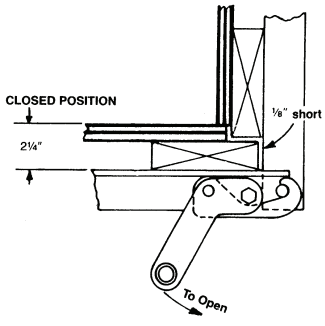
The diagonal corner, from the locking corner, acts as the hinge point for easy opening and resetting of the GATES Lok-Fast Column Form.

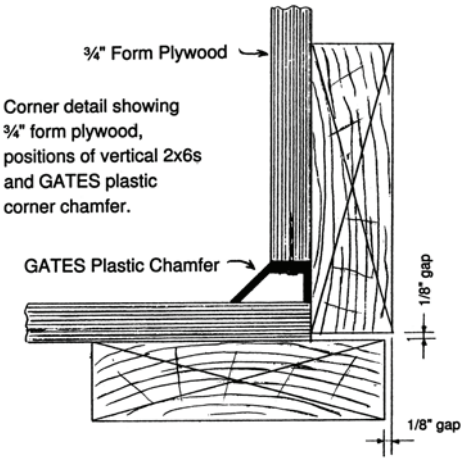


GATES Column Clamps are designed with ⅜″ holes spaced 2″ on centers in the 2½″ down leg of the Column Clamp angle to provide easy attachment to the form by using either a $^{5}/_{16}$ x 2″ lag screw or a $^{5}/_{16}$″ flat-head through-bolt.

Squaring corners may be installed in opposite corners of the Column Clamp to help stabilize the Column Form while setting and stripping. *Do Not* depend on the GATES squaring corner to completely square the Column Form. Check and brace the Column Form, after setting making sure it is plumb and square.







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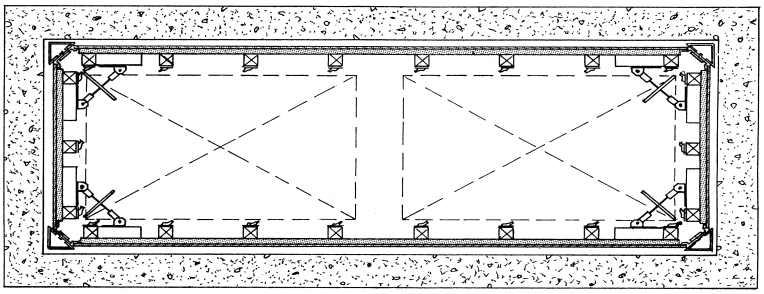
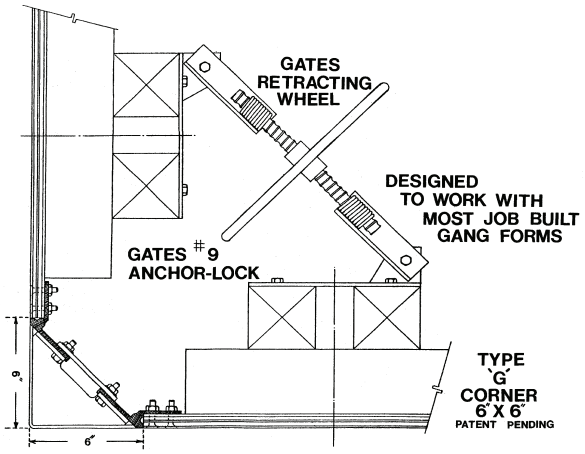
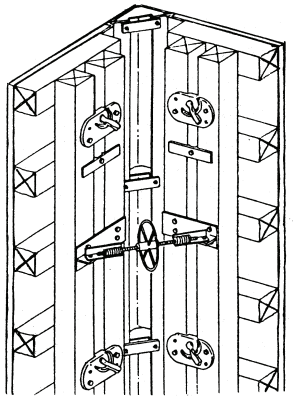
Gates Retractable Inside Corner

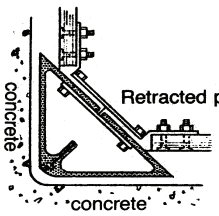


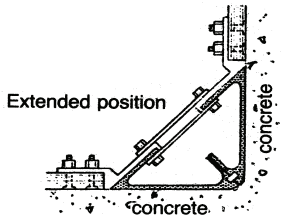
Gates Retractable Aluminum I.S. Corner

For elevator or stair gang form use, provides 5/8" clearance on each side at all four corners. To retract, loosen all bolts on vertical cross bars spaced on 24" centers using a speed wrench. Rotate turnbuckles in unison, drawing forms away from concrete walls. Lift gang forms and reset.

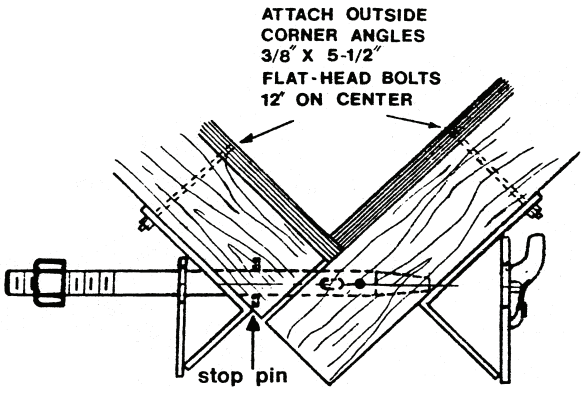






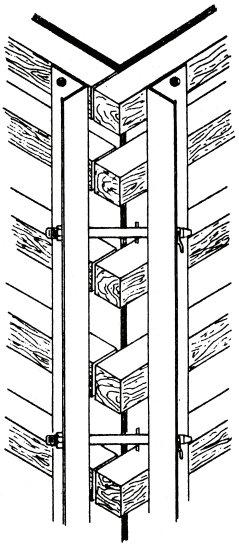


NEW – Pin'N Lock Outside Corner



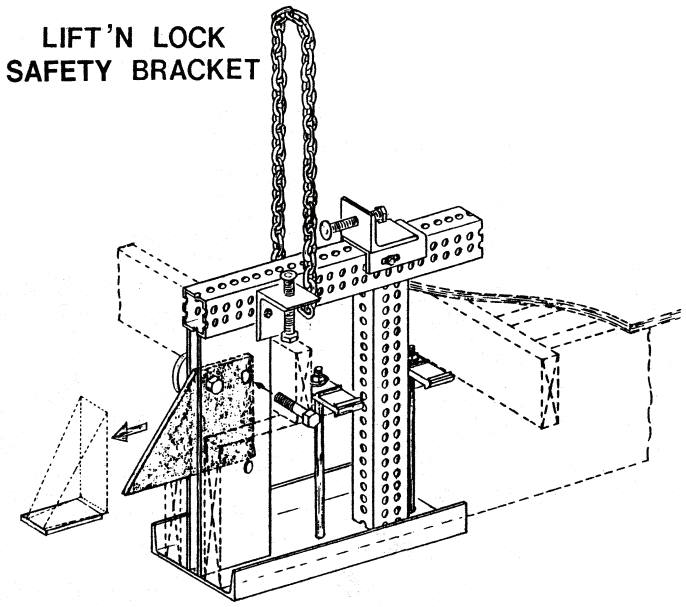
You can have leakproof corners using Gates adjustable Pin'N Lock heavy duty, outside steel corners with no loose parts.

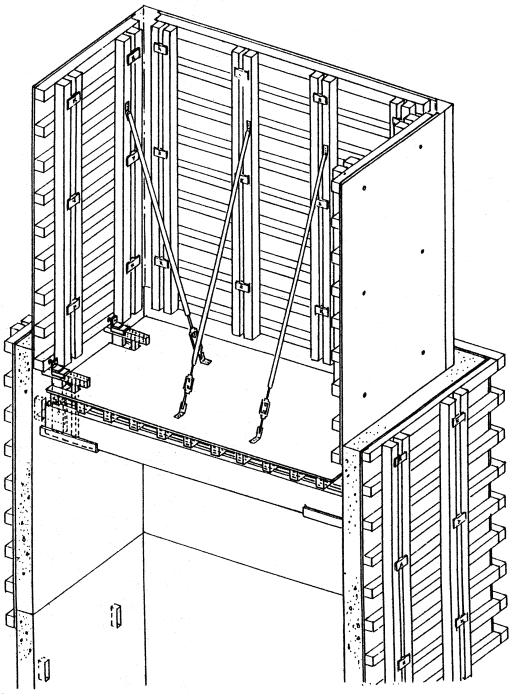
- Tight Outside Corners
- No Loose Parts
- Adjustable Locking Pin
- Fast, Easy to Use

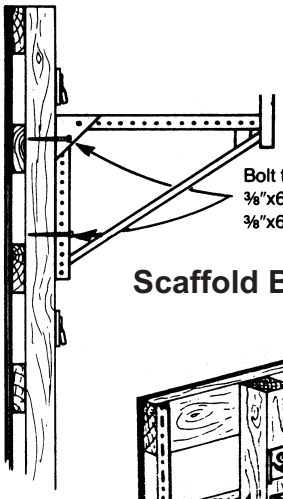


Gates

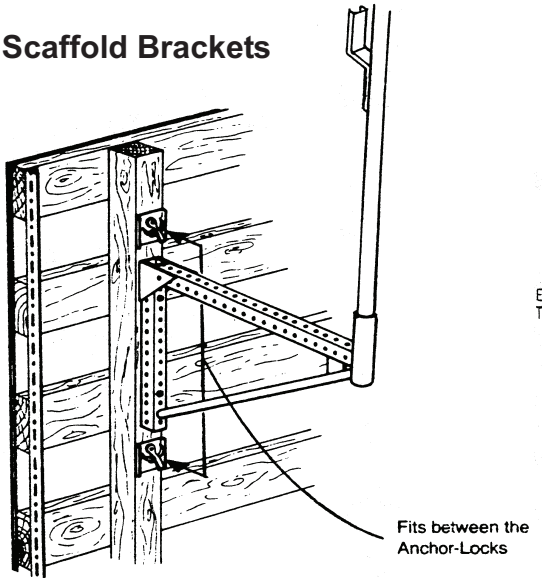
Lift'N Lock Safety Platform

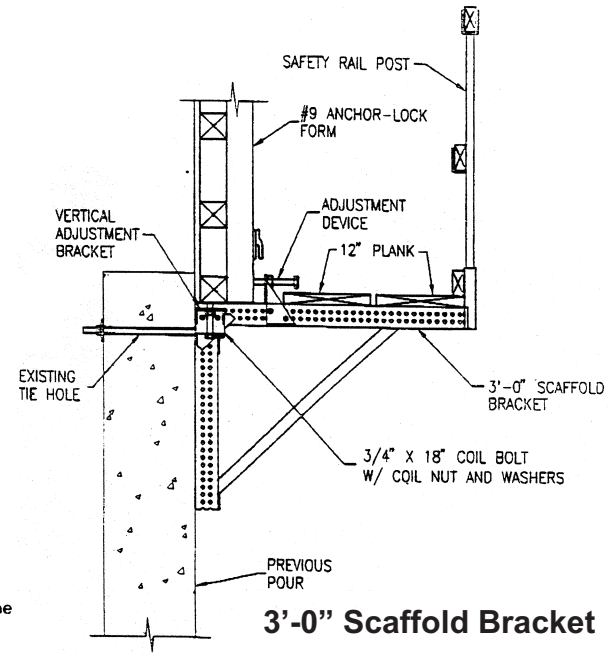






Scaffold Brackets





3'-0" Scaffold Bracket

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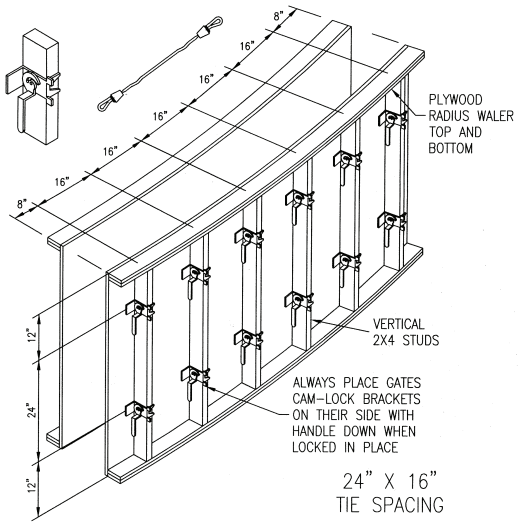
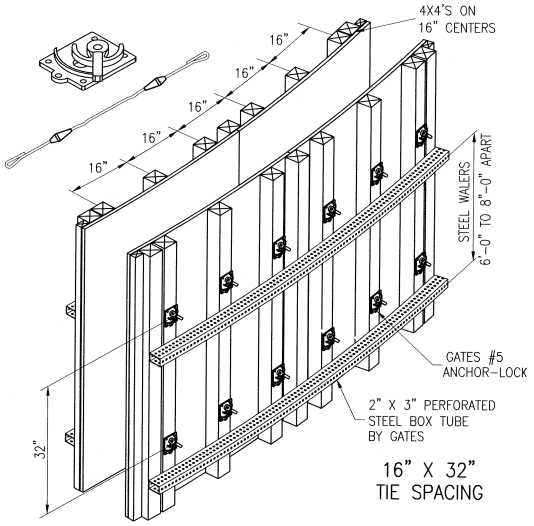
Gates

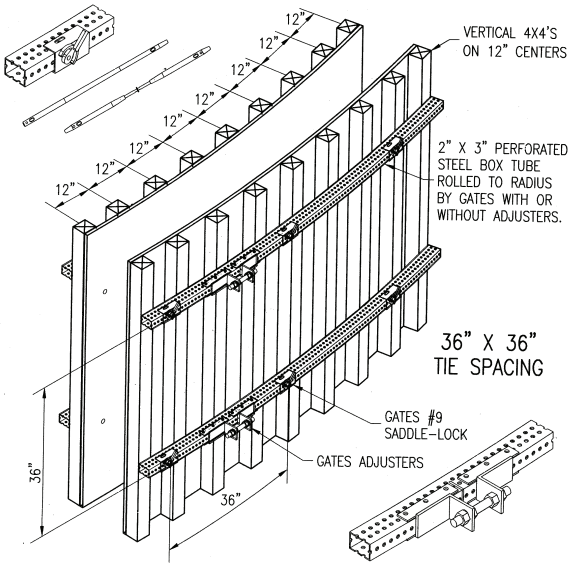
Radius Wall Forming



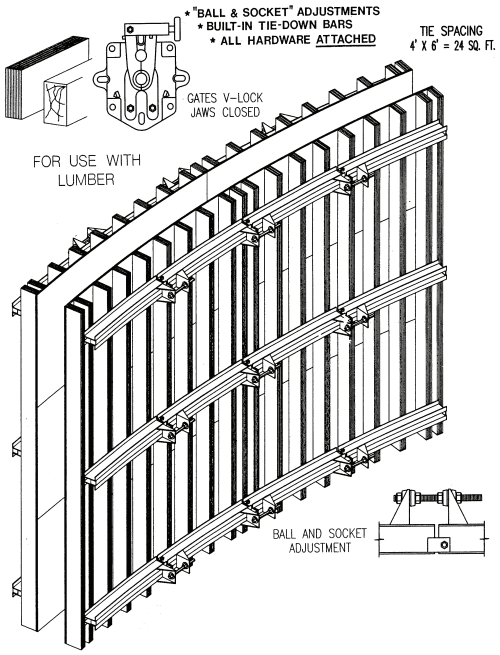
Suggested Cam-Lock Radius Forming Details



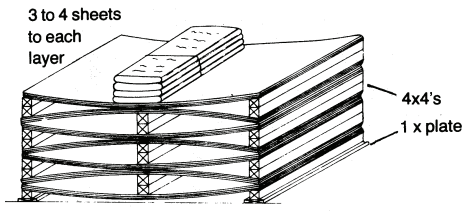
Suggested #5 Anchor-Lock Forming Details



Suggested #9 Anchor-Lock Forming Details



Educated Radius Walers



Prebending Plywood Panels

Plywood Bending	
20'-0" Dim.	3 Pieces 1/4"
30'-0" Dim.	2 Pieces 3/8"
40'-0" Dim.	2 Pieces 3/8"
50'-0" Dim.	1 Piece 5/8"
60'-0" Dim.	1 Piece 3/4"

And Larger

Basic Pressure Formulas

Wall Pours

CONCRETE PRESSURE GENERAL NOMENCLATURE

P = Lateral Pressure (PSF)

R = Rate of Placement (feet per hour)

T = Ambient Temperature, unless controlled (degrees F). See note 2.

h = Height of Fresh Concrete above specified point of interest (feet).

General Formula:

$$P = 150\ \frac{9{,}000R}{T}$$

(Maximum "P" value 2,000 PSF, minimum 600 PSF, in no case greater than 150h). See note 2.

Modified Formula:

$$P = 150 + \frac{43{,}400}{T} + \frac{2{,}800R}{T}$$

(Maximum "P" value 2,000 PSF, minimum 600 PSF, in no case greater than 150h). See note 2.

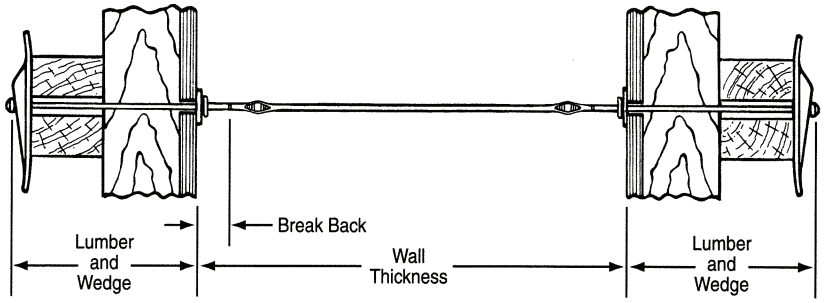
Notes:

1. The background and reference for these equations and restrictions may be found in "Recommended Practice for Concrete Formwork", American Concrete Institute (ACI), Standard 347R-88.

2. The 150 used in the formulas is pounds per cubic foot, the recognized concrete weight for formwork design.

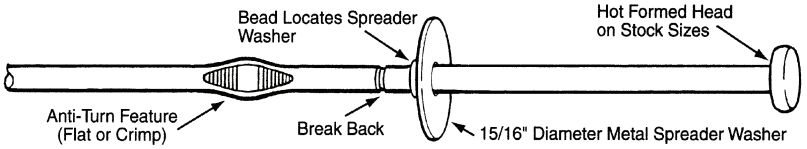
3. All uncontrolled placements faster than 7'-0" per hour and controlled wall pours exceeding 10'-0" per hour with 4'-0" or less layered placements should be analyzed per full liquid head, 150h.

Snap Ties



Standard Snap Tie
2,250 Lbs.
Safe Working Load

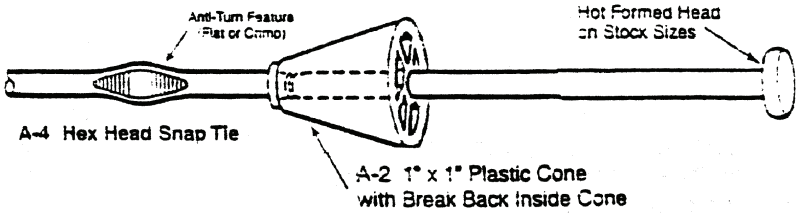
Heavy Snap Tie
3,350 Lbs.
Safe Working Load



Washer Type

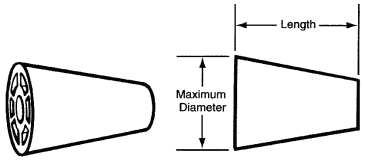
Standard End Dimensions
4-3/4" Short Ends
8-1/4" Long Ends

Special End Dimensions Available.



Cone Type

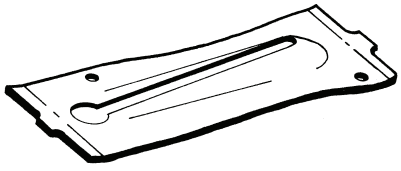
Plastic Cones



A-2 Plastic Cone Selection Chart

Diameter	Length
3/4"	1", 1-1/2"
1"	1", 1-1/2"
1-1/4"	1-1/2", 2"

Omni Wedge



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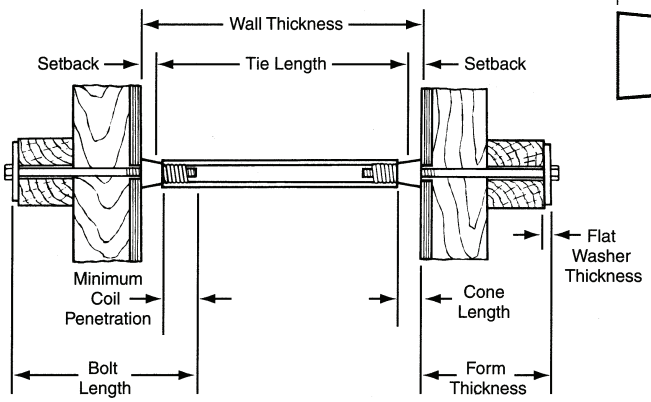
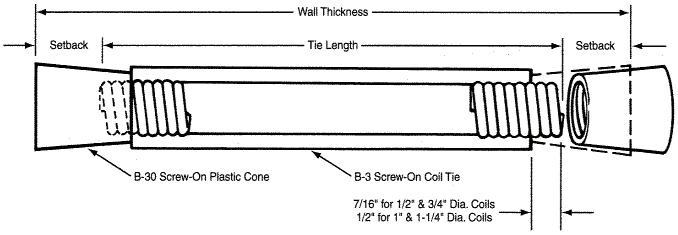
Coil Ties



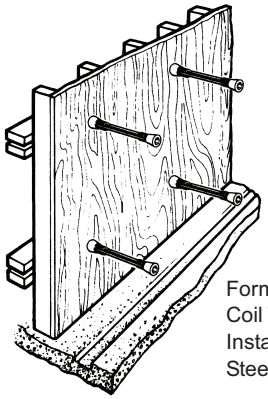


B-3 Screw-On Coil Tie

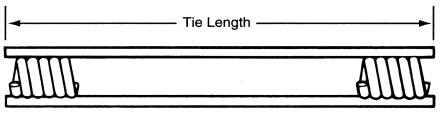
B-3 Screw-On Coil Tie Selection Chart

Type	Bolt Diameter	Number of Strut Wires	Safe Working Load Tension Lbs.
B-3 Standard	1/2”	2	4,500
B-3 Heavy	1/2”	2	6,750
B-3 Standard	3/4”	2	6,750
B-3 Heavy	3/4”	2	9,000
B-3 Standard	1”	2	13,500
B-3 Standard	1”	4	18,000
B-3 Standard	1-1/4”	4	27,000

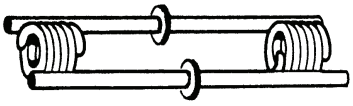
SWL provides a factor of safety of approximately 2 to 1.



Form Panel Showing B-3 Coil Ties in Place Prior to Installation of Reinforcing Steel and Closure Form

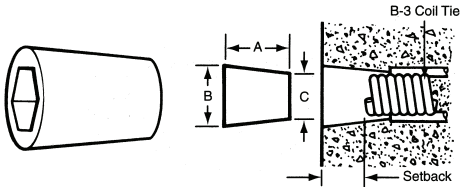


B-1 Two Strut Coil Tie



B-4 Water Seal Coil Tie

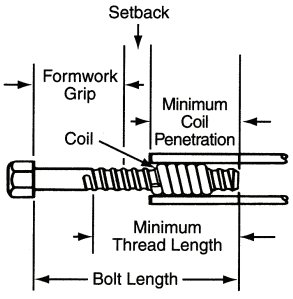
B-30 Screw-On Plastic Cones



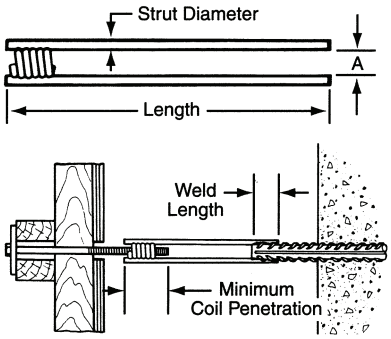
B-30 Screw-On Selection Chart

Bolt Dia.	Setback	A	B	C
1/2”	1”	1-3/8”	1-1/4”	1”
1/2”	1-1/2”	1-7/8”	1-1/4”	1”
1/2”	2”	2-3/8”	1-1/4”	1”
3/4”	1”	1-1/2”	1-5/8”	1-7/16”
3/4”	2”	2-1/2”	1-3/4”	1-7/16”
1”	2”	2-1/2”	2-1/8”	1-13/16”
1-1/4”	2”	2-1/2”	2-3/8”	2-1/8”

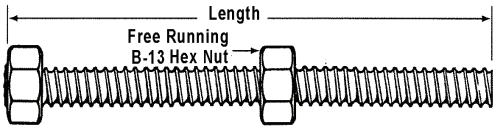
B-14 Coil Bolts



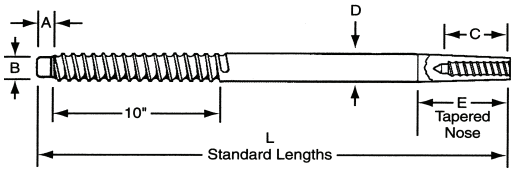
B-6 Welding Coil Tie

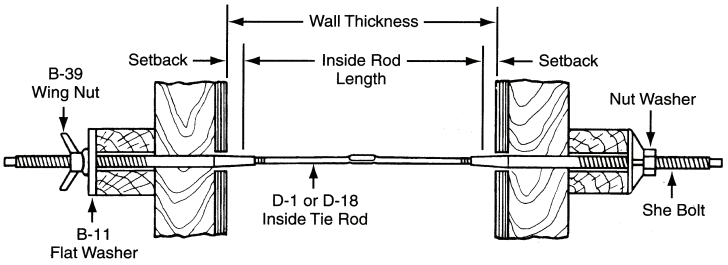


B-14-A Adjustable Coil Bolts



D-2 and D-30 She-Bolts

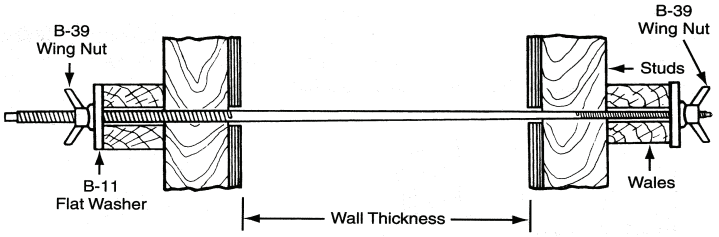




D-2 and D-3 She-Bolt Selection Chart

Type	Safe Working Load Tension Lbs.	She-Bolt External Thread Dia.	She-Bolt External Thread Type	Inside Tie Rod Thread Dia.	Inside Tie Rod Thread Type	A	B	C	D	E	L	External Hardware Required
D-2	9,000	3/4"	Acme	1/2"	NC	5/8"	1/2"	1-1/4"	3/4"	3"	20"	3/4" Dia. D-6
D-30	9,000	7/8"	Coil	1/2"	Coil	1"	1/2"	1-1/2"	7/8"	2-3/4"	18", 20", 24"	7/8" Dia. B-27 or B-39
D-30	12,000	7/8"	Coil	5/8"	Coil	1"	1/2"	1-1/2"	7/8"	2-3/4"	18", 20", 24"	7/8" Dia. B-39
D-30	18,000	1-1/4"	Coil	3/4"	Coil	1"	3/4"	2"	1-1/4"	4"	20", 24", 30", 35"	1-1/4" Dia. B-39
D-30	37,500	1-1/2"	Coil	1"	Coil	1"	3/4"	2"	1-1/2"	4"	20", 24", 30", 35"	1-1/2" Dia. B-39
D-30 HS	56,000	1-1/2"	Coil	1-1/4"	Coil	1"	3/4"	2-3/4"	1-3/4"	4"	20", 24", 30", 35"	1-1/2" Dia. B-39

D-9 Taper Ties

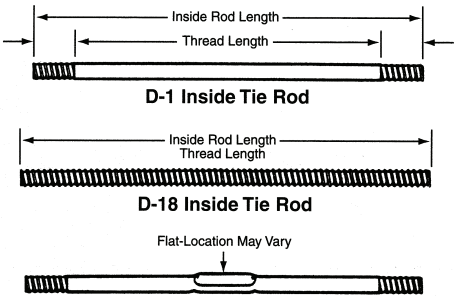


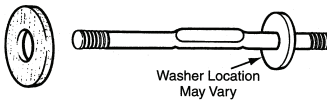
D-9 Taper Ties Selection Chart

Safe Working Load Tension Lbs.	Large End of Tie Coil Thread Dia.	Large End of Tie Length of Thread	Small End of Tie Coil Thread Dia.	Small End of Tie Length of Thread	Standard Tie Lengths	Tapered Body Dia.
7,500	3/4"	10"	1/2"	2"	34", 43", 52"	.670" to .500"
18,000	1"	10"	3/4"	6"	30", 36", 42", 48", 54", 60", 72"	.884" to .750"
34,000	1-1/4"	10"	1"	6"		1.113" to 1.00"
50,000	1-1/2"	10"	1-1/4"	6"		1-1/2" to 1-1/4"
75,000	1-3/4"	10"	1-1/2"	6"	36", 48", 60", 72"	1-3/4" to 1-1/2"

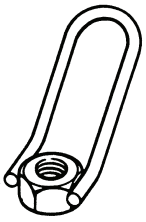
SWL provides a factor of safety of approximately 2 to 1.

D-1 and D-18 Inside Tie Rods

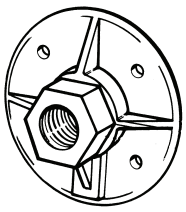




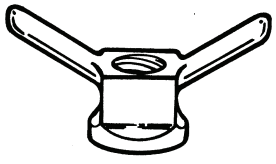
D-33 Waterseal Washer



B-32 Handle Coil Nut



B-27 Nut Washer



B-39 Wing Nut

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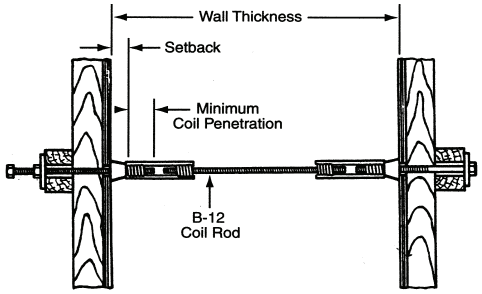
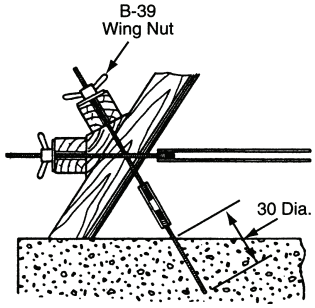
B-12 Coil Rod

B-12 Coil Rod Selection Chart

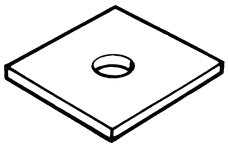
Coil Rod Dia.	Safe Working Loads Lbs. Tension	Shear	Minimum Root Area Sq. In.	Tensile Strength PSI	Yield Stress PSI	Minimum Coil Penetration
1/2”	9,000	6,000	.1385	130,000	110,000	2”
5/8”	12,000	8,000	.2124	113,000	96,000	2-1/4”
3/4”	18,000	12,000	.3079	117,000	100,000	2-1/4”
7/8”	31,000	20,600	.4477	117,000	100,000	2-1/2”
1”	38,000	25,300	.5410	140,000	120,000	2-1/2”
1-1/8”	45,000	30,000	.7163	126,600	105,000	2-1/2”
1-1/4”	56,000	37,500	.9161	123,000	105,000	2-1/2”
1-1/2”	68,000	45,300	1.3892	98,000	85,000	3”

SWL provides a factor of safety of approximately 2 to 1.





B-11 Flat Washers



B-11 Flat Washer Selection Chart

Bolt Diameter	Type	Safe Working Load Lbs.	Size
1/2”	Standard	4,500	3” x 4” x 1/4”
1/2”	Heavy	6,750	4” x 5” x 1/4”
3/4	Standard	6,750	4” x 5” x 1/4”
3/4	Heavy	9,000	5” x 5” x 3/8”
1	Standard	18,000	5” x 5” x 7/16”
1	Heavy	37,500	7” x 7” x 3/4”
1-1/4	Standard	27,000	5” x 5” x 7/16”
1-1/4	Heavy	37,500	7” x 7” x 3/4”
1-1/2	Standard	37,500	5” x 5” x 3/4”
1-1/2	Heavy	37,500	7” x 7” x 3/4”

SWL provides a factor of safety of approximately 2 to 1.

B-13 Coil Nut & B-25 Heavy Coil Nut

B-13 Standard Coil Nut

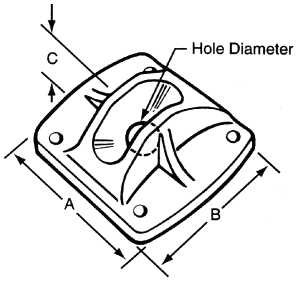
B-25 Heavy Coil Nut

B-13 Coil Nut and B-25 Heavy Coil Nut Selection Chart

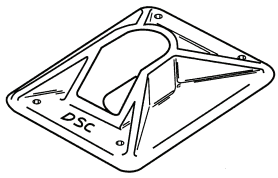
Coil Nut Type	Dia.	Approx. Height	Width Across Flats A	Safe Working Load Tension Lbs. Using One B-13 Nut	Using Two B-13 Nuts or One B-25 Heavy Nut
B-13	1/2”	7/16	7/8	6,000	9,000
B-25	1/2”	1-3/16	1-1/8	–	9,000
B-13	3/4”	5/8	1-1/8	9,000	18,000
B-25	3/4”	1-3/16	1-1/8	–	18,000
B-13	1”	1	1-5/8	18,000	37,500
B-25	1”	2	1-3/8	–	37,500
B-13	1-1/4”	1-1/4	2	27,000	56,250
B-13	1-1/4”	1-1/2	2-3/8	40,500	67,500

SWL provides a factor of safety of approximately 2 to 1.

B-42 and D-22 Batter Washers



B-42



D-22

B-42 and D-22 Batter Washer Selection Chart

Type	Bolt Dia.	Hole Dia.	A	B	C
B-42	1/2”	9/16”	3-9/16”	3”	1”
B-42	3/4”	7/8”	3-7/8”	4-3/4”	1-1/2”
B-42	1”	1-1/16”	6-3/4”	5-1/4”	1-3/4”
D-22	1-1/4” - 1-3/8”	1-5/8”	6”	7”	1-7/8”
D-22	1-1/2” - 1-5/8”	1-3/4”	6-1/2”	7-3/4”	2”

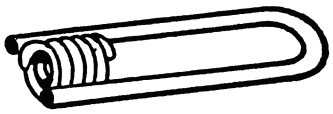
B-16 Coil Loop Insert Straight

Selection Chart

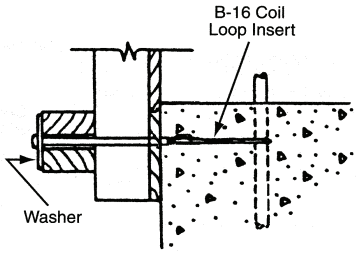
Bolt Diameter	Insert Length	Wire Strut Diameter	Safe Working Load Tension Lbs.	Minimum Concrete Strength PSI
1/2”	3”	.223	4,500	2,000
1/2”	4”	.223	4,500	2,000
1/2”	6”	.306	7,500	2,000
3/4”	4”	.223	4,500	2,000
3/4”	6”	.306	7,500	2,000
1”	6”	.306	7,500	2,000
1”	8”	.306	7,500	2,000

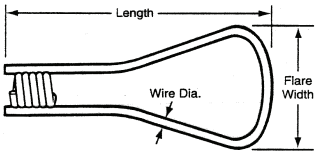
SWL provides a factor of safety of approximately 2 to 1.

SWL may vary with concrete weight and strength, as well as with insert setback and edge distance. Contact the Dayton/Richmond Technical Service Department for variables.

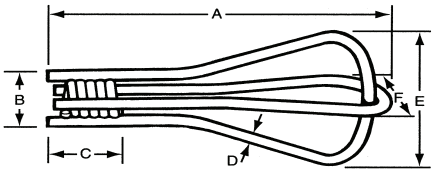


B-16 Coil Loop Insert

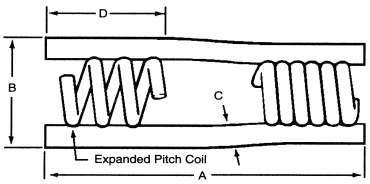




B-18 Single Flared Coil Insert



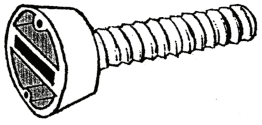
B-33 Double Flared Criss Cross Coil Loop Insert



F-56 Expanded Coil Insert for Coil Threaded Bolts

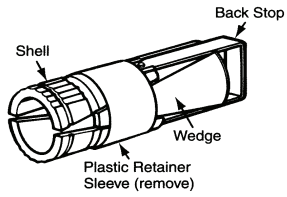
Coil Loop Protectors

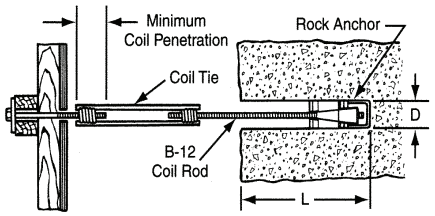
Install Coil Inserts.
Provide Setback.



For 1/2”, 3/4”, 1” Dia. Inserts

B-31 Rock Anchor





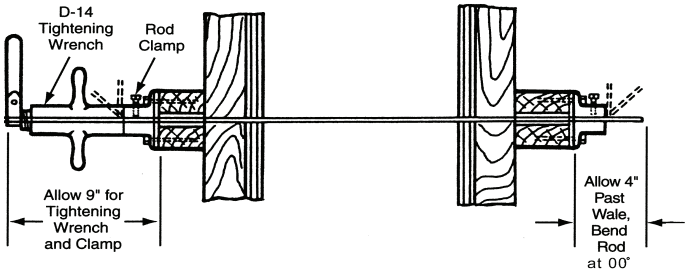
B-31 Rock Anchor Selection Chart

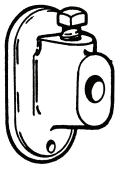
Coil Rod Diameter	Min. Hole Depth “L”	Req. Hole Dia. “D”	Safe Working Load Tension Lbs.
1/2”	6”	1-3/8”	4,500
3/4”	8”	1-5/8”	9,000
1”	10”	1-3/4”	18,000

SWL provides a factor of safety of approximately 2 to 1.

TOLL FREE 800-892-7224
800-821-7735
ca construction anchors, inc.
LOCAL 816-525-3640
FAX 816-525-4533

D-12 and D-12-S Rod Clamps

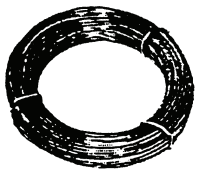




D-12 Rod Clamp

D-12-S
Rod Clamp

Pencil Rod

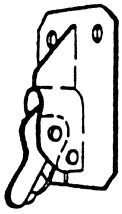


Coils or Straight

D-12 and D-12-S Rod Clamp Selection Chart

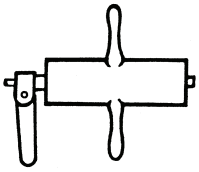
Type	Rod Diameter	Safe Working Load Tension Lbs.
D-12	1/4”	1,125
D-12-S	1/4”	1,125
D-12	3/8”	2,250
D-12-S	3/8”	2,250
D-12	1/2”	3,750

D-12 Form Clamp

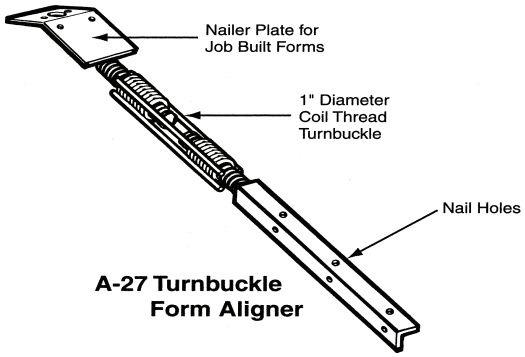


Rod Size	Approx. Safe Working Load
1/4”	1,250
3/8”	3,000
1/2”	5,000
5/8”	7,500

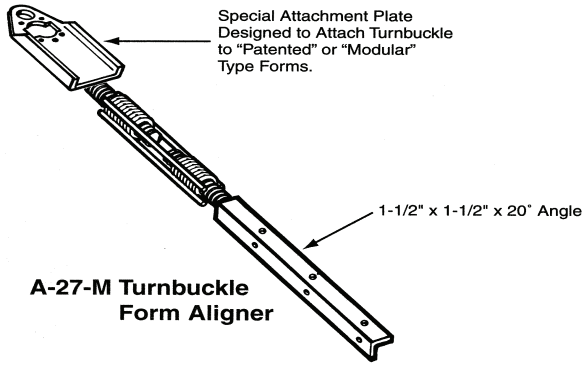
D-14 Tightening Wrench



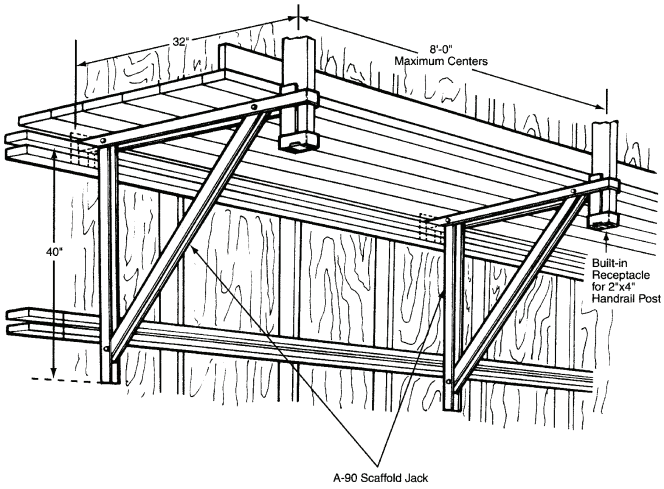
A-27 and A-27-M Turnbuckle Form Aligners



A-27 Turnbuckle
Form Aligner



A-27-M Turnbuckle
Form Aligner



A-90 Scaffold Bracket Jack