

Concrete Forming

Reinforcing Products
Engineered Products
Concrete Forming
Road & Bridge
Precast
Tilt-Up

MeadowBurke

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Safety Considerations

Meadow Burke recommends that provisions outlined in the American Concrete Institute publication, "Recommended Practice for Concrete Formwork" (ACI 347), be strictly adhered to by all persons and organizations working in the concrete construction industry. Meadow Burke also strongly advises that the safety factors shown in the Minimum Safety Factors of Formwork Accessories Table be followed. If there are any unusual job site conditions, such as shock, impact, vibration, etc., safety factors must be increased to ensure worker protection.

MINIMUM SAFETY FACTORS OF FORMWORK ACCESSORIES		
Accessory	Safety Factor	Type of Constuction
Form Tie	2:1	All formwork
Form Hangers	2:1	Supporting form, concrete weight and live loads
Form Anchor	2:1	Supporting form weight and concrete pressure only
Form Anchor	3:1	Supporting form weight, concrete pressure, live loads and impact
Insert Used as Form Tie	2:1	Precast concrete panels used as formwork Heavy cantilever formwork

RATED LOADS

It is apparent from the Table that the safety factor applied to a given product is a variable depending on the degree of hazard involved in the application of the product. The user of the products in this publication must determine the applicable safety factor for the products as a function of its use as described in the Table.

Product load ratings are based on the ultimate strength of the metal. Safe working loads displayed in this publication are approximate minimum values. Due to the variety of applications, the responsibility of selecting appropriate safety factors is up to the user of the product. Any recalculation of safe working loads due to a change in the approximate minimum safety factor should include a careful analysis of all hardware used in the application and the anticipated concrete strength involved. If any doubt, contact a Meadow Burke Service Center for clarification.

PRODUCT LIABILITY

Meadow Burke stresses that the products in this publication are to be used by experienced workers with competent supervision. If an end user does not have qualified and experienced workers or installers, or does not have the technical expertise in the application of the product or does not know the consequences from improper use of the product; do not use the product without consulting a Meadow Burke Service Center.

WORN WORKING PARTS

It is the responsibility of the user to continually inspect working parts and hardware for wear. If wear is present, the product should be discarded. Do not attempt to straighten bent bolts; they should be scrapped. Discard any bolts known to have been used at loads of 70% or more of ultimate capacity.

WELDING

Since it is impossible to control field conditions, Meadow Burke does not guarantee any product that has been altered in any way after leaving its factory of origin. This includes any type of welding or bending. Do not weld any Meadow Burke product without the assurance from a qualified engineer that the weld is in a non-critical area. Welding can cause embrittlement at the load point and greatly reduce load carrying capacity.

CAUTION: *It is extremely important for the user of Meadow Burke products to evaluate product applications, determine the appropriate minimum safe working loads and control all field conditions to prevent loads in excess of the determined minimum safe working loads.*

WARNING: *Improper application or faulty installation of any product displayed in this publication can cause hazardous conditions that can result in serious injury or death.*

PRODUCT DESIGN

Meadow Burke reserves the right to change product designs and/or product safe load ratings at any time without prior notice.

FACTORS AFFECTING LATERAL PRESSURE ON FORMWORK

WEIGHT OF CONCRETE

The weight of concrete is a direct influence since hydrostatic pressure at any point in a fluid is created by the weight of the superimposed fluid. Liquid (hydrostatic) pressure is the same in all directions at a given depth in the fluid and acts at right angles to any surface that confines it. If concrete acted as a true liquid, the pressure would be equal to the density of fluid times the depth, to the point at which the pressure was being considered. However, concrete is a mixture of solids and water whose behavior only approximates that of liquid for a limited time.

RATE OF PLACEMENT

The average rate of rise of the concrete in the form is referred to as the rate of placement. The rate of placement has a primary effect on lateral pressure and the maximum lateral pressure is proportional to the rate of placement, up to a limit equal to the full fluid pressure. As the concrete is being placed, the lateral pressure at a given point increases as the concrete depth above the point increases. Finally, by consolidation and/or stiffening, the concrete will support itself and will no longer cause lateral pressure on the form.

CONCRETE VIBRATION

Internal vibration is a primary method of consolidating concrete in the form. It results in temporary, local lateral pressures that are 10 to 20 percent greater than those caused by simple spading. Since internal vibrating is an accepted common practice, forms should be designed to handle the added pressures.

Revibration and external vibration are other types of vibration used in certain types of construction. Revibration and external vibration methods produce higher lateral loads than the internal vibration process and require specially designed forms. External vibration (also referred to as form vibration) is accomplished by attaching vibrators to the outside of the form. The form itself is vibrated to hammer the form against the concrete. The frequency/amplitude of external vibration must be regulated to consolidate the concrete but not too strong to damage the form. Revibration is the process where a vibrator is forced down through the upper placement into layers of concrete that have stiffened or have nearly reached initial set. Localized lateral pressures, up to 300 psf/ft of head of concrete, have been recorded using vigorous revibration. Neither revibration nor external vibrations have been sufficiently investigated to be expressed in a standard formula. Pressure formulae in this publication are limited to concrete vibrated internally at the time of placement.

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General Form Design Data

CONCRETE TEMPERATURE

The temperature of the concrete at the time of placement has an important influence on pressure due to the affect it has on the setting time of the concrete. At lower concrete temperatures, the concrete takes longer to stiffen, so a greater depth of concrete can be placed before it becomes firm enough to be self-supporting. The greater liquid head results in higher lateral pressures. This is an important form design consideration when anticipating concrete placement in cold weather, with fly ash replacement or when using retarding admixtures.

OTHER VARIABLES

There are numerous other variables that will affect the lateral pressure in the form. Such things as the consistency of the concrete, the amount and location of

reinforcing steel, ambient temperature, pore water pressure, aggregate size, placing procedures, type of cement, depth of placement, cross-section of the form, smoothness of the form faces and permeability of the form can all have an effect on the lateral pressure in the form. However, under normal conditions and forming practices, the range of these variable effects is generally small and is usually neglected.

On the other hand, the use of fly ash or other pozzolan as a cement replacement at low ambient temperatures or with a retarding mixture can have a significant effect on lateral pressure. Likewise, super-plasticizing admixtures and the retarders themselves can have a substantial effect on the lateral pressure. These conditions must be given due consideration during the form design process.

LATERAL PRESSURE VALUES FOR FORM DESIGN

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VERTICAL WALL FORMS

The American Concrete Institute Committee 347-04 (Chapter 2) has developed the formulas below for maximum lateral pressure on the form, prescribed temperatures, rate of placement, vibration, concrete weight and slump. They are working formulas based on available data and are recommended for form design. No claim is made for their theoretical precision.

For columns:

$$p = C_W C_C (150 + 9000 R/T) \dots\dots\dots 2.2$$

Maximum = wh

Minimum = 600C_wpsf

Walls with Rate of Placement (R) not exceeding 7 ft/hr and wall height not exceeding 14 ft:

$$p = (150 + 9,000R/T) C_C C_W \dots\dots\dots 2.3$$

Maximum = wh

Minimum = 600C_wpsf

Walls with Rate of Placement (R) not exceeding 7 ft/hr and wall heights exceeding 14 ft, and for all walls with a placement rate of 7 to 15 ft/hr:

$$p = C_W C_C (150 + 43,400/T + 2,800R/T) \dots\dots\dots 2.4$$

Maximum = wh

Minimum = 600C_wpsf

Where:

- p = maximum lateral pressure (psf)
- R = rate of placement (ft/hr)
- T = temperature of the concrete
- h = maximum height of fresh concrete
- w = unit weight of concrete (pcf)
- C_w = unit weight coefficient, 1.0 for w = 150 pcf
- C_c = chemistry coefficient

The formulae are applicable for internally vibrated structural concrete of normal weight and density, produced with Type I cement and containing no pozzolans or admixtures and with a slump of less than four inches. Good concrete placing procedures are assumed; for example, vibration is used for consolidation only and is limited to four (4) feet below the surface of the concrete. The formulae assume that concrete "set" will occur as expected, usually in one hour. Do not use design pressures in excess of $w \times h$.

Table 2.5 is based on Formulae 2.3 and 2.4 and wall heights not exceeding 14 ft. It shows the maximum lateral pressures to be used for form design for rates of placement up to 10 ft/hr and concrete temperatures from 40° to 90° F.

Since studs and sheathing are usually uniform throughout their height, only the maximum pressure value is required for their design. However, wales and tie spacing may be increased near the top of the form due to lower lateral pressure there.

MAXIMUM LATERAL PRESSURE FOR DESIGN OF VERTICAL WALL FORMS						
Rate of Placement, R (ft per hr)	p, Maximum Lateral Pressure, psf, for Temperature Indicated, max wall height = 14 ft.					
	90° F	80° F	70° F	60° F	50° F	40° F
1						
2	600	600	600	600	600	600
3	600	600	600	600	690	825
4	600	600	664	750	870	1050
5	650	713	793	900	1050	1275
6	750	825	921	1050	1230	1500
7	850	938	1050	1200	1410	1725
8	881	973	1090	1247	1466	1795
9	912	1008	1130	1293	1522	1865
10	943	1043	1170	1340	1578	1935

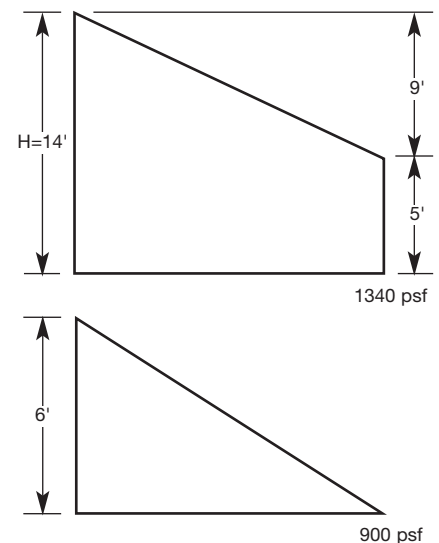
Table 2.5

NOTE: Do not use design pressures in excess of $w \times h$ of fresh concrete in forms.

A wall form 14' high may be concreted at $R=10'$ per hour with normal weight concrete (150 pcf), when the temperature is 60°F. Maximum pressure by Formula 2.4 or from Table above is 1340 psf. Since this is comparable to fluid pressure up to the time concrete begins to stiffen appreciably, any point within $1340/150 = 9'$ from the top of the form will have proportionately less pressure than the maximum. The 1340 maximum is used for design throughout the remaining 5' of the form.

Keep in mind that the pressure given in the formula (and shown in the sketch to right) represents an envelope of maximum pressure exerted during the total time required to fill the form. The diagram does not show distribution of pressure over the form surface at any one time.

In the case of a wall form only 6' high, concrete at the same $R = 10'$ per hour and temperature of 60° F, the limit of $w \times h$ applies since it is less than the value given by the formula. The envelope of maximum pressure then is as shown to the right.

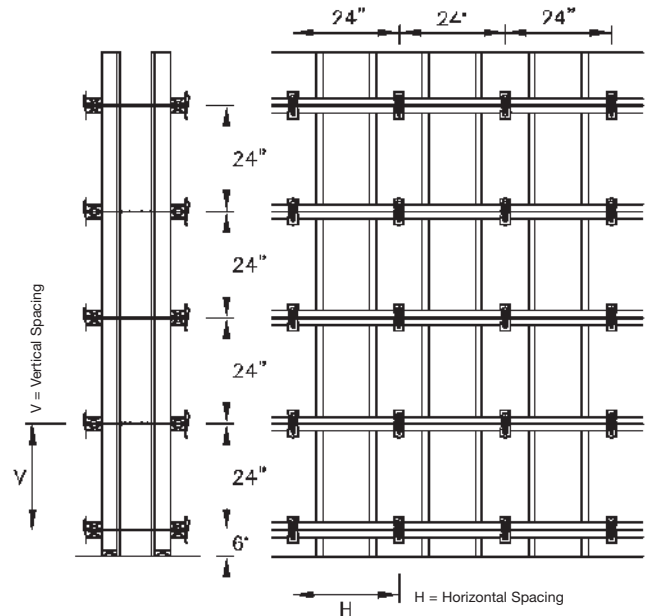


General Form Design Data

TYPICAL TIE LOCATIONS AND FORM DESIGN

Notes, Cautions and Warnings:

- If actual rate of placement exceeds design rate of placement, a snap tie or form failure may occur.
- If "set" time of concrete is altered by additives, i.e. entrained air, pozzolans, fly ash or other retarders, excess vibration or any other means of alterations or incorrect temperature allowances, then one of the lower row ties will likely fail due to an overload condition.
- Remember, a full liquid head of 150h can develop if concrete "set" does not occur when expected (or if concrete "set" is interrupted by excessive vibration). If, for example, a 12' wall is poured in 3 hours at a rate of 4' per hour design, and a form tie (or ties) fails, usually in the 2nd or 3rd row from the bottom, then the concrete probably did not "set" when expected, and a full or partial liquid head (150h) developed, causing much higher pressure than expected.



Caution: It takes the concrete more than one hour to "set" under the following conditions:

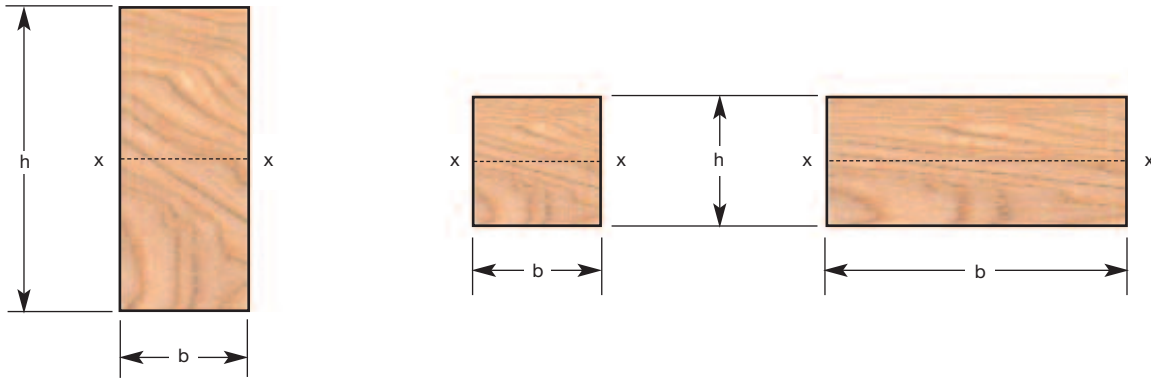
- The addition of admixtures or pozzolans
- The addition of retarders or entrained air
- Actual temperature is less than design temperature
- Excessive vibration to depths greater than four feet below concrete surface
- Vibrator used to move concrete laterally in the form
- Revibration of prior vibrated areas
- Concrete slump in excess of four inches
- Use of cement other than Type 1 Portland Cement

Note: Normal concrete, 150 lbs. per cu. foot, without any additives, retarders or excessive vibration, at 70°F to 80°F will "set" in about 1-3/4 hours. It is possible for concrete "set" to take up to 3 hours under certain conditions. Forming contractors should exercise the utmost caution when evaluating expected "set" time. It is the least controllable of all parameters involved.

TYPICAL TIE LOCATION AND FORM DESIGN														
Tie Spacing			Recommended Form Design			R = Rate of placement and ambient temperature (°F)						Concrete Pressure, psf	Actual Tie Load, lbs	
Horizontal Spacing	Vertical Spacing	Tie Area ft ²	Sheathing	Stud Size & Spacing	Wales	40°	50°	60°	70°	80°	90°			
2250 LB SAFE WORK LOAD SNAP TIES														
3'-0"	1'-0"	3	5/8 Plyform 3/4 Plyform	2x4@10"o/c 2x4@11"o/c	DBL 2x4/ SGL 2 x 6	2'-8"	3'-4"	4'-0"	4'-8"	5'-4"	6'-0"	750	2250	
2'-0"	1'-4"	2.66	5/8 Plyform 3/4 Plyform	2x4@9"o/c 2x4@10"o/c	DBL 2x4/ SGL 2 x 6	3'-1"	3'-10"	4'-7"	5'-4"	6'-2"	6'-11"	846	2250	
1'-6"	2'-0"	3	5/8 Plyform 3/4 Plyform	2x4@10"o/c 2x4@11"o/c	SGL 2 x 6	2'-8"	3'-4"	4'-0"	4'-8"	5'-4"	6'-0"	750	2250	
3250 LB SAFE WORK LOAD SNAP TIES														
3'-0"	1'-4"	4	5/8 Plyform 3/4 Plyform	2x4@9"o/c 2x4@10"o/c	DBL 2x6	2'-11"	3'-8"	4'-4"	5'-1"	5'-10"	6'-7"	813	3250	
2'-6"	2'-0"	5	5/8 Plyform 3/4 Plyform	2x4@10"o/c 2x4@12"o/c	DBL 2x6	2'-2"	2'-9"	3'-4"	3'-10"	4'-4"	5'-0"	650	3250	
2'-0"	2'-8"	5.34	5/8 Plyform 3/4 Plyform	2x4@10"o/c 2x4@12"o/c	DBL 2x4/ SGL 2 x 6	2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-7"	609	3250	

- Table is based on a concrete "set" time of one hour. If "set" times of more than one hour are anticipated, adjust pour rates accordingly.
- Table is based on equation 2.3 on page 4.
- Stud spacing based on plywood face grain parallel to span and APA rated Class 1 Plywood.
- Stud and waler design based on SYP #2 lumber.

COMMON FORMING LUMBER PROPERTIES



PROPERTIES OF STRUCTURAL LUMBER									
Nominal Size (in.) b x h	American Standard Size (in.) b x h S4S* 19% Maximum Moisture	Area of Section A = bh, (sq in.)		Moment of Inertia (in.) $I = \frac{bh^3}{12}$		Section Modulus (in.) $S = \frac{bh^2}{6}$		Board Feet (per lineal ft of piece)	Approx. Weight (lbs per lineal ft)†
		Rough	S4S	Rough	S4S	Rough	S4S		
4 x 2	3 1/2 x 1 1/2	5.89	5.25	1.30	0.98	1.60	1.31	2/3	1.5
6 x 2	5 1/2 x 1 1/2	9.14	8.25	2.01	1.55	2.48	2.06	1	2.3
8 x 2	7 1/4 x 1 1/2	11.98	10.87	2.64	2.04	3.25	2.72	1 1/3	3.0
10 x 2	9 1/4 x 1 1/2	15.23	13.87	3.35	2.60	4.13	3.47	1 2/3	3.9
12 x 2	11 1/4 x 1 1/2	18.48	16.87	4.07	3.16	5.01	4.21	2	4.7
2 x 4	1 1/2 x 3 1/2	5.89	5.25	6.45	5.36	3.56	3.06	2/3	1.5
2 x 6	1 1/2 x 5 1/2	9.14	8.25	24.10	20.80	8.57	7.56	1	2.3
2 x 8	1 1/2 x 7 1/4	11.98	10.87	54.32	47.63	14.73	13.14	1 1/3	3.0
2 x 10	1 1/2 x 9 1/4	15.23	13.87	111.58	98.93	23.80	21.39	1 2/3	3.9
2 x 12	1 1/2 x 11 1/4	18.48	16.87	199.31	177.97	35.04	31.64	2	4.7
3 x 4	2 1/2 x 3 1/2	9.52	8.75	10.42	8.93	5.75	5.10	1	2.4
3 x 6	2 1/2 x 5 1/2	14.77	13.75	38.93	34.66	13.84	12.60	1 1/2	3.8
3 x 8	2 1/2 x 7 1/4	19.36	18.12	87.74	79.39	23.80	21.90	2	5.0
3 x 10	2 1/2 x 9 1/4	24.61	23.12	180.24	164.89	38.45	35.65	2 1/2	6.4
3 x 12	2 1/2 x 11 1/4	29.86	28.12	321.96	296.63	56.61	52.73	3	7.8
4 x 4	3 1/2 x 3 1/2	13.14	12.25	14.39	12.50	7.94	7.15	1 1/3	3.4
4 x 6	3 1/2 x 5 1/2	20.39	19.25	53.76	48.53	19.12	17.65	2	5.3
4 x 8	3 1/2 x 7 1/4	26.73	25.38	121.17	111.15	32.86	30.66	2 2/3	7.0
4 x 10	3 1/2 x 9 1/4	33.98	32.38	248.91	230.84	53.10	49.91	3 1/3	9.0

* Rough dry sizes are 1/8" larger, both dimensions.

† Based on a unit weight value of 40 lb. per cu. ft. Actual weights vary depending on species and moisture content.

Data supplied by the National Forest Products Association

General Form Design Data

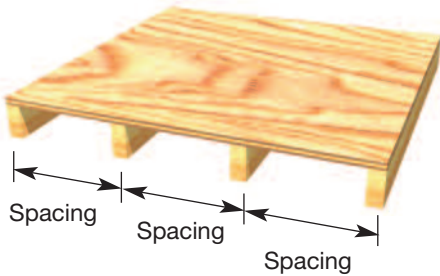
FORM LOADING IN POUNDS/SQ. FOOT FOR INCREMENTAL SLAB THICKNESS*

FORM LOADING DATA								
Concrete Weight (lbs per sq ft)	Slab Thickness							
	2 in.	4 in.	6 in.	8 in.	10 in.	12 in.	14 in.	16 in.
100	67	84	100	117	134	150	167	184
115	70	89	108	127	146	165	185	204
125	71	92	113	134	155	175	196	217
135	73	95	118	140	163	185	208	230
150	75	100	125	150	175	200	225	250

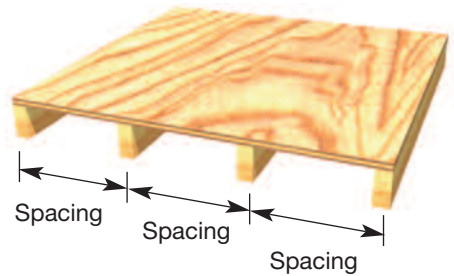
*Values above include 50 psf live load for construction loads. Formwork dead load is not included.

Safe Spacing (l) in Inches of Supports for Plywood Sheathing
 Continuous Over Four or More Supports
 $\Delta_{max} = l/360$, but not to exceed 1/16"

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Sanded thickness, panel grain parallel to span

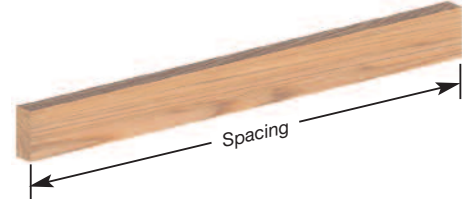


Sanded thickness, panel grain perpendicular to span.

Pressure or Load (lbs per sq ft)	TABLE BASED ON APA RATED PLYWOOD CLASS 1							
	F _s = 72 psi		F _b = 1930 psi		E _s = 1500000 psi		E = 1650000 psi	
	Sanded Thickness, Face Grain Parallel to Span				Sanded Thickness, Face Grain Perpendicular to Span			
	1/2 in.	5/8 in.	3/4 in.	1 in.	1/2 in.	5/8 in.	3/4 in.	1 in.
75	21	24	26	31	14	16	21	28
100	19	22	24	29	13	14	19	26
125	18	21	23	27	12	13	19	24
150	17	20	22	26	11	12	17	23
175	15	19	21	25	10	11	15	22
200	15	18	20	24	10	11	15	21
300	13	15	18	21	8	9	12	19
400	12	13	15	20	7	8	11	17
500	11	12	14	18	7	7	10	14
600	10	11	13	16	6	7	9	13
700	9	10	12	15	5	6	8	12
800	8	10	11	14	4	5	7	11
900	8	9	10	13	4	4	6	11
1000	7	8	10	13	3	4	5	10

Safe Spacing (l) in Inches of Supports for Joists, Studs, etc. Single Span

$$\Delta_{max} = l^3/360, \text{ but not to exceed } 1/4''$$



SIMPLE SPAN

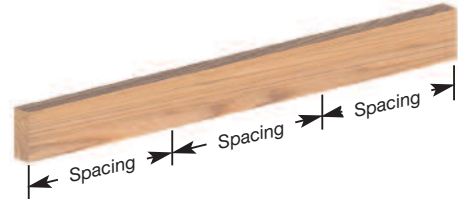
Equivalent Uniform Load (lbs per lineal ft)	SIMPLE SPAN SINGLE-PLY WALES							
	E = 1,600,000 psi							
	Nominal Size of S4S Lumber							
	2 x 4	2 x 6	2 x 8	2 x 10	2 x 12	3 x 6	4 x 4	4 x 8
	Fb (psi) =							
	1500	1250	1200	1050	975	1250	1500	1200
100	58	91	112	135	156	104	77	139
200	46	73	94	113	131	86	61	117
300	40	61	78	102	118	75	54	105
400	36	52	68	88	103	68	49	98
500	32	47	61	79	92	61	45	93
600	30	43	55	72	84	55	43	85
700	27	39	51	66	78	51	40	78
800	26	37	48	62	73	48	39	73
900	24	35	45	58	69	45	37	69
1000	23	33	43	55	65	43	35	65
1100	22	31	41	53	62	41	33	62
1200	21	30	39	51	59	39	32	60
1300	20	29	37	49	57	37	31	57
1400	19	28	36	47	55	36	30	55
1500	19	27	35	45	53	35	29	53
1600	18	26	34	44	51	34	28	52
1700	17	25	33	42	50	33	27	50
1800	17	24	32	41	48	32	26	49
1900	16	24	31	40	47	31	25	47
2000	16	23	30	39	46	30	25	46
2100	16	23	29	38	45	29	24	45
2200	15	22	29	37	44	29	24	44
2300	15	22	28	36	43	28	23	43
2400	15	21	27	36	42	27	22	42
2500	14	21	27	35	41	27	22	41
2600	14	20	26	34	40	26	22	40
2700	14	20	26	34	39	26	21	40
2800	13	19	25	33	39	25	21	39
2900	13	19	25	32	38	25	20	38
3000	13	19	24	32	37	24	20	38

1. All values based on 2005 NDS for S.Y.P. #2 $C_D = 1.45$, $C_{M,b} = 0.85$ (1.0 for 2 x 10 & 2 x 12), $C_{M,v} = 0.97$, $C_{M,E} = 0.9$
2. Multi-spans continuous over 3 spans or 4 supports.
3. $\Delta_{max} = l^3/360$, does not to exceed 1/4"
4. All values based on worst case of deflection, bending or shear.
5. All values above bold line are controlled by deflection. Bending and shear govern below.

General Form Design Data

Safe Spacing (l) in Inches of Supports for Joists, Studs, etc. Continuous Over Three or More Supports

$$\Delta_{max} = l/360, \text{ but not to exceed } 1/4"$$



MULTI-SPAN SINGLE WALES CONTINUOUS OVER 3-SPANS OR 4 SUPPORTS

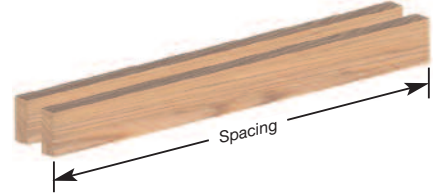
Equivalent Uniform Load (lbs per lineal ft)	MULTI-SPAN SINGLE-PLY WALES							
	E = 1,600,000 psi							
	Nominal Size of S4S Lumber							
	2 x 4	2 x 6	2 x 8	2 x 10	2 x 12	3 x 6	4 x 4	4 x 8
	Fb (psi) =							
	1500	1250	1200	1050	975	1250	1500	1200
100	72	107	131	158	183	121	94	163
200	57	83	107	133	154	102	76	137
300	47	68	88	114	133	88	66	123
400	41	59	76	98	115	76	60	115
500	36	52	68	88	103	68	56	104
600	33	48	62	80	94	62	51	95
700	31	44	57	74	87	57	47	88
800	29	41	53	69	81	53	44	82
900	27	39	50	65	77	50	41	77
1000	26	37	48	62	73	48	39	73
1100	24	35	46	59	69	46	37	70
1200	23	34	44	57	66	44	36	67
1300	22	32	42	54	64	42	34	64
1400	21	31	40	52	61	40	33	62
1500	20	30	39	51	59	39	32	60
1600	19	29	38	49	57	38	31	58
1700	18	28	37	47	56	37	30	56
1800	17	27	35	46	54	35	29	54
1900	17	26	35	45	53	35	28	53
2000	16	25	34	43	51	34	28	52
2100	15	24	32	41	50	33	27	50
2200	15	23	31	40	49	32	26	49
2300	14	23	30	38	47	31	26	48
2400	14	22	29	37	45	31	25	47
2500	13	21	28	36	44	30	25	46
2600	13	21	27	35	43	29	24	45
2700	13	20	27	34	42	29	24	44
2800	12	20	26	33	40	28	23	44
2900	12	19	25	32	39	28	23	43
3000	12	19	25	32	38	27	22	42

- All values based on 2005 NDS for S.Y.P. #2 $C_D = 1.45$, $C_{M,b} = 0.85$ (1.0 for 2 x 10 & 2 x 12), $C_{M,v} = 0.97$, $C_{M,E} = 0.9$
- Multi-spans continuous over 3 spans or 4 supports.
- $\Delta_{max} = l/360$, does not to exceed 1/4"
- All values based on worst case of deflection, bending or shear.
- All values above bold line are controlled by deflection. Bending and shear govern below.

10

Safe Spacing (l) in Inches of Supports for Double Wales Single Span

$$\Delta_{max} = l/360, \text{ but not to exceed } 1/4''$$



SIMPLE SPAN 2-DOUBLE WALES

Equivalent Uniform Load (lbs per lineal ft)	SIMPLE SPAN DOUBLE-PLY WALES							
	E = 1,600,000 psi							
	Nominal Size of S4S Lumber							
	2 x 4	2 x 6	2 x 8	2 x 10	2 x 12	3 x 6	4 x 4	4 x 8
	Fb (psi) =							
	1500	1250	1200	1050	975	1250	1500	1200
100	73	108	133	160	185	123	95	165
200	58	91	112	135	156	104	77	139
300	51	80	101	122	141	94	67	125
400	46	73	94	113	131	86	61	117
500	43	66	86	107	124	80	57	110
600	40	61	78	102	118	75	54	105
700	38	56	73	94	110	71	51	101
800	36	52	68	88	103	68	49	98
900	34	49	64	83	97	64	47	95
1000	32	47	61	79	92	61	45	93
1100	31	45	58	75	88	58	44	88
1200	30	43	55	72	84	55	43	85
1300	28	41	53	69	81	53	41	81
1400	27	39	51	66	78	51	40	78
1500	26	38	49	64	75	49	39	76
1600	26	37	48	62	73	48	39	73
1700	25	36	46	60	71	46	38	71
1800	24	35	45	58	69	45	37	69
1900	23	34	44	57	67	44	36	67
2000	23	33	43	55	65	43	35	65
2100	22	32	42	54	63	42	34	64
2200	22	31	41	53	62	41	33	62
2300	21	31	40	52	61	40	33	61
2400	21	30	39	51	59	39	32	60
2500	20	29	38	50	58	38	31	59
2600	20	29	37	49	57	37	31	57
2700	20	28	37	48	56	37	30	56
2800	19	28	36	47	55	36	30	55
2900	19	27	35	46	54	35	29	54
3000	19	27	35	45	53	35	29	53

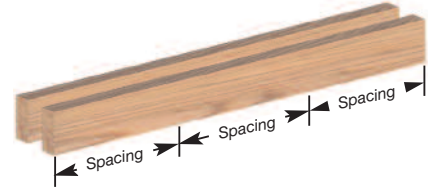
11

1. All values based on 2005 NDS for S.Y.P. #2 $C_D = 1.45$, $C_{M,b} = 0.85$ (1.0 for 2 x 10 & 2 x 12), $C_{M,v} = 0.97$, $C_{M,E} = 0.9$
2. Multi-spans continuous over 3 spans or 4 supports.
3. $\Delta_{max} = l/360$, does not to exceed 1/4"
4. All values based on worst case of deflection, bending or shear.
5. All values above bold line are controlled by deflection. Bending and shear govern below.

General Form Design Data

Safe Spacing (l) in Inches of Supports for Double Wales Continuous Over Three or More Spans

$$\Delta_{max} = l/360, \text{ but not to exceed } 1/4"$$

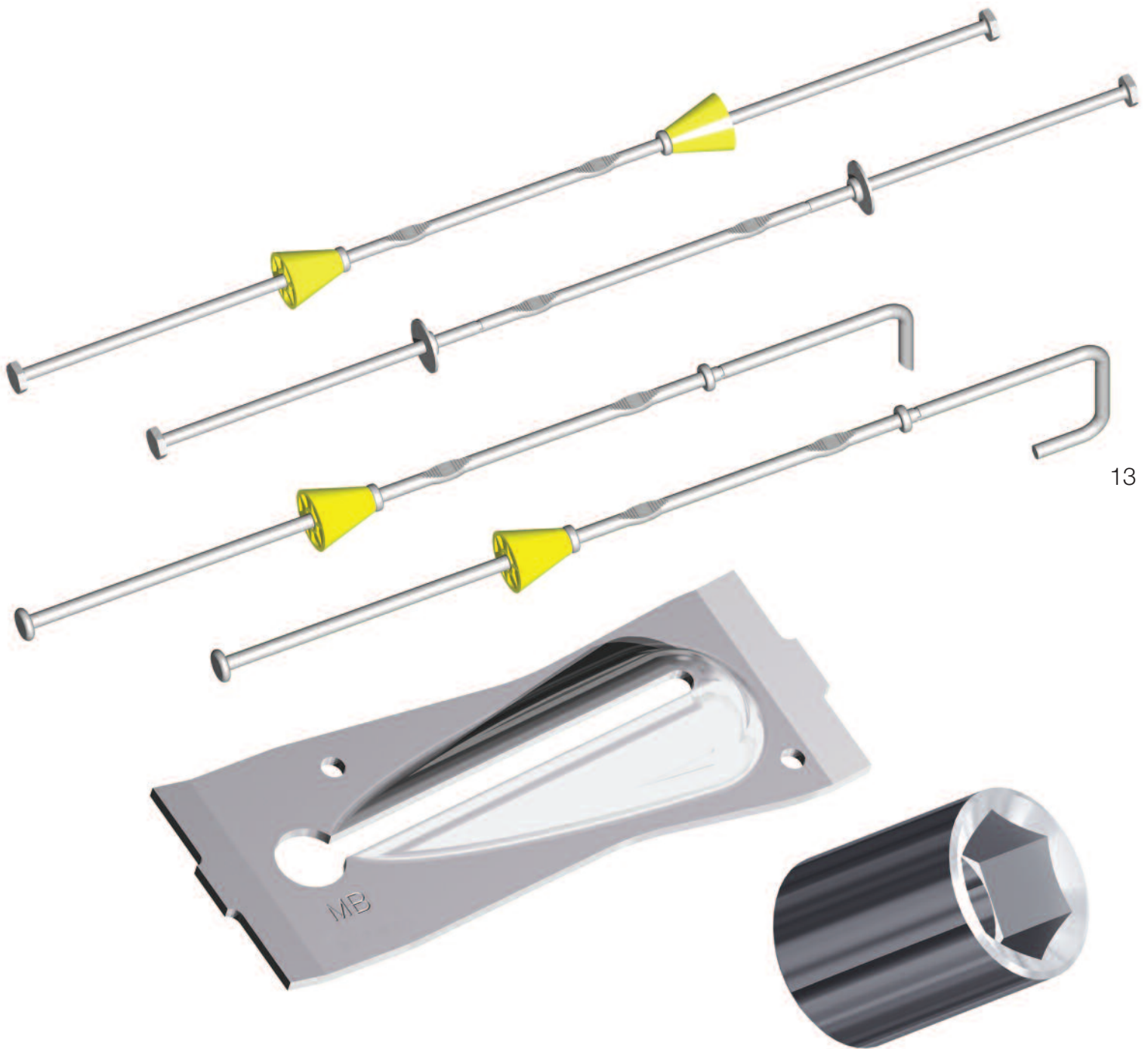


MULTI-SPAN DOUBLE WALES CONTINUOUS OVER 3-SPANS OR 4 SUPPORTS

Equivalent Uniform Load (lbs per lineal ft)	MULTI-SPAN DOUBLE-PLY WALES							
	E = 1,600,000 psi							
	Nominal Size of S4S Lumber							
	2 x 4	2 x 6	2 x 8	2 x 10	2 x 12	3 x 6	4 x 4	4 x 8
	Fb (psi) =							
	1500	1250	1200	1050	975	1250	1500	1200
100	91	127	156	188	217	144	112	193
200	72	107	131	158	183	121	94	163
300	63	96	119	143	165	110	83	147
400	57	83	107	133	154	102	76	137
500	52	74	96	125	145	96	70	129
600	47	68	88	114	133	88	66	123
700	44	63	81	105	123	81	63	119
800	41	59	76	98	115	76	60	115
900	38	55	71	93	109	71	58	109
1000	36	52	68	88	103	68	56	104
1100	35	50	65	84	98	65	53	99
1200	33	48	62	80	94	62	51	95
1300	32	46	59	77	90	59	49	91
1400	31	44	57	74	87	57	47	88
1500	30	43	55	72	84	55	45	85
1600	29	41	53	69	81	53	44	82
1700	28	40	52	67	79	52	43	80
1800	27	39	50	65	77	50	41	77
1900	26	38	49	64	75	49	40	75
2000	26	37	48	62	73	48	39	73
2100	25	36	47	61	71	47	38	71
2200	24	35	46	59	69	46	37	70
2300	24	34	45	58	68	45	37	68
2400	23	34	44	57	66	44	36	67
2500	23	33	43	55	65	43	35	65
2600	22	32	42	54	64	42	34	64
2700	22	32	41	53	63	41	34	63
2800	21	31	40	52	61	40	33	62
2900	21	31	40	51	60	40	33	61
3000	20	30	39	51	59	39	32	60

1. All values based on 2005 NDS for S.Y.P. #2 $C_D = 1.45$, $C_{M,b} = 0.85$ (1.0 for 2 x 10 & 2 x 12), $C_{M,v} = 0.97$, $C_{M,E} = 0.9$
2. Multi-spans continuous over 3 spans or 4 supports.
3. $\Delta_{max} = l/360$, does not to exceed 1/4"
4. All values based on worst case of deflection, bending or shear.
5. All values above bold line are controlled by deflection. Bending and shear govern below.

Meadow Burke Snapties

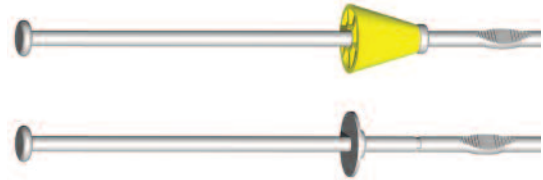


Meadow Burke Snapties

(1001) ST-1 SNAPTIE - STANDARD

The ST-1 Standard Snaptie has round heads, anti-turn deformations and 1" breakback. A 1/2" breakback is available on special order. The Snaptie is available equipped with either plastic spreader cones or loose metal washers. For additional rust and corrosion resistance, the Standard Snaptie is available in stainless steel as an ST-8.

NOTE: The plastic cones, furnished from high impact polystyrene, are available in the sizes 1x1, 1x1-1/2 and 1x2. Cones are preferred over a loose washer tie since it covers the break back portion of the tie. Such guarantee of break back is not available with the loose washer tie. When removed the plastic cone also provides a better cavity for grouting purposes. Attempting to break-back any tie, before the concrete has been allowed to properly set, may result in the entire tie turning freely in the wall, making the normal breakback procedure no longer possible. Washer style snapties should be removed before 24 hours of concrete pour.



SAFE WORKING LOAD

TYPE	SWL (lbs)
ST-1	2,250

Safe working load is based on an approximate 2:1 safety factor.

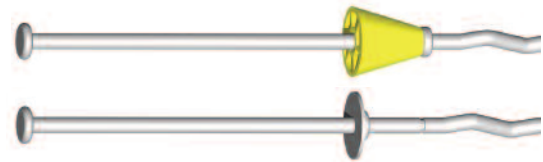
14

To Order, Specify: quantity, type, L&W, wall thickness, plastic cone or metal washer and breakback.

(1003) ST-3 SNAPTIE - HEAVY

The ST-3 Heavy Snaptie incorporates all of the same design features of the standard snaptie but is fabricated from high carbon steel to produce a higher safe working load. It is available with plastic cones or loose metal washers.

To Order, Specify: quantity, type, L&W, wall thickness, plastic cone or metal washer and breakback.

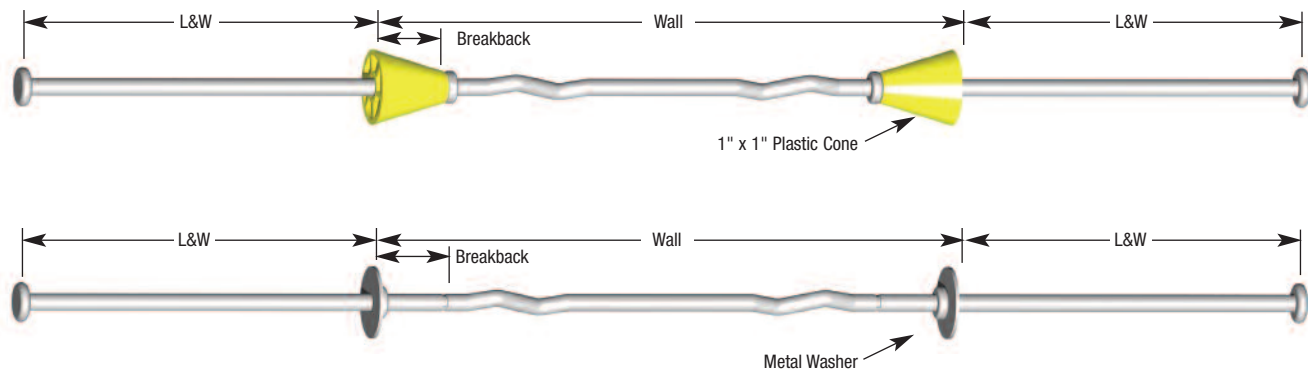


SAFE WORKING LOAD

TYPE	SWL (lbs)
ST-3	3,250

Safe working load is based on an approximate 2:1 safety factor.

(L&W = Lumber & Wedge)



SNAPTIE DON'TS

- Do not climb on Snapties in the form.
- Do not over-tighten the tie wedges. This can cause severe pre-loading and premature failure.
- Do not place concrete in just one area of the form and allow it to exceed the design pour rate.
- Do not attempt to move the concrete laterally in the form with a vibrator.
- Do not drop the wet concrete more than 30" when placing into the form. This will result in aggregate segregation and unnecessary dangerous impact loading.
- Do not install bent or damaged ties.
- Do not allow Snaptie ends to remain in the wall beyond 24 hours. Remove the breakback portion of the tie as soon as reasonably possible.
- Do not skip or omit any studs or wales. This will likely cause a premature form failure.
- Do not weld Snapties to any object.

SNAPTIE WATERSEAL

All Meadow Burke Snapties are available with a neoprene washer to aid in preventing moisture seepage along the tie wire. Specify this feature when ordering a snaptie product.

(1005) ST-4 SNAPTIE – HEX HEAD – 6 SIDED

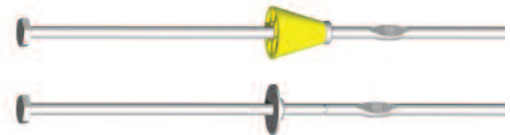
The ST-4 Hex Head Snaptie, (previously known as Wrench Head) provides an effective way to breakback snapties before the formwork has been stripped. The head of the snaptie is grasped by the Hex Head Socket (on Page 18) and with a simple turning motion, breaks off the end of the snaptie. Removing the snaptie ends in this manner increases the ease and speed of the form stripping operation.

Hex Head Snapties are available with 1" x 1" plastic spreader cones and 1" breakback.

Metal washers available on special order only.



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SAFE WORKING LOAD	
TYPE	SWL (lbs)
ST-4	2,250

Safe working load is based on an approximate 2:1 safety factor.

(1008) ST-5 SNAPTIE – THREADED ONE END

The ST-5 Threaded One End Snaptie is manufactured with 1/4"-20 threads x 2" length on one end and a standard hot forged head on the opposite end. This tie has a metal washer and is used when walls have a variable thickness. A small channel can be installed on either end and then used as a welding tie.

SAFE WORKING LOAD	
TYPE	SWL (lbs)
ST-5	250

Safe working load is based on an approximate 2:1 safety factor.



Meadow Burke Snapties

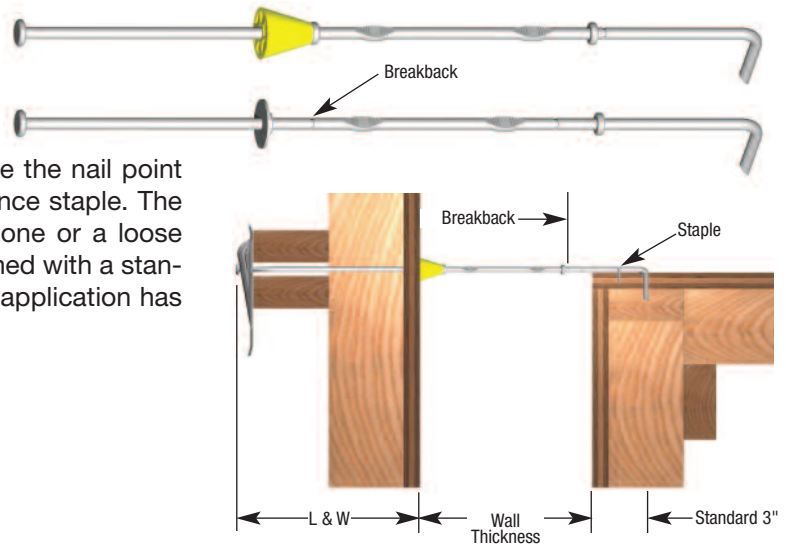
(1010) ST-6 SNAPTIE – NAIL POINT

The ST-6 Nail Point Snaptie is designed to have the nail point driven into the formwork and secured with a fence staple. The tie is available with either a plastic spreader cone or a loose metal washer. The plastic cone snaptie is furnished with a standard 1" breakback and the loose metal washer application has a 1/2" breakback.

SAFE WORKING LOAD	
TYPE	SWL (lbs)
ST-6	250

Safe working load is based on an approximate 2:1 safety factor.

To Order, Specify: quantity, type, L&W, wall thickness, plastic cone or metal washer.



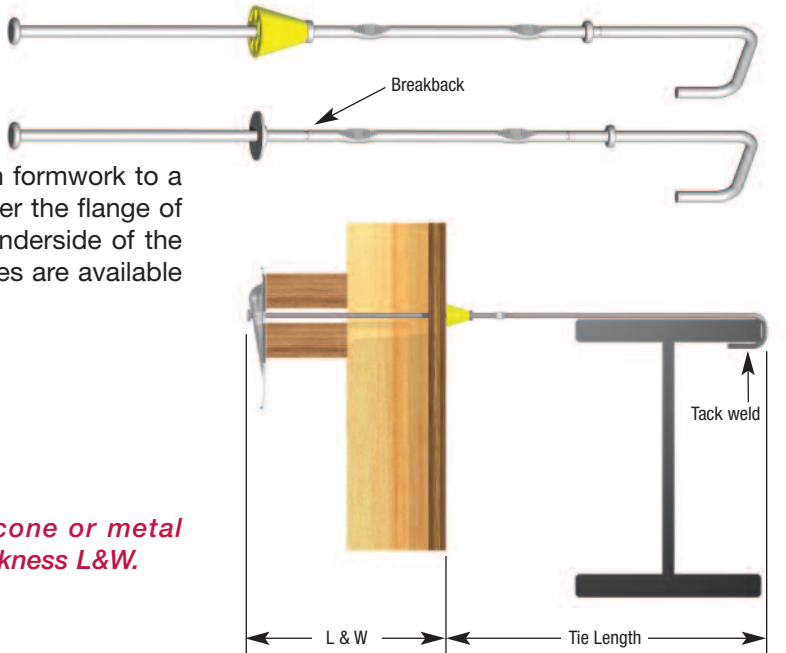
(1012) ST-7 SNAPTIE – HOOKED

The ST-7 Hooked Snaptie is designed to attach formwork to a structural beam. The hook end of the tie fits over the flange of the beam and should be tack-welded on the underside of the beam flange for added security. Hooked snapties are available with plastic cone or loose metal washer.

SAFE WORKING LOAD	
TYPE	SWL (lbs)
ST-16	250

Safe working load is based on an approximate 2:1 safety factor.

To Order, Specify: quantity, type, plastic cone or metal washer, length, flange thickness and form thickness L&W.



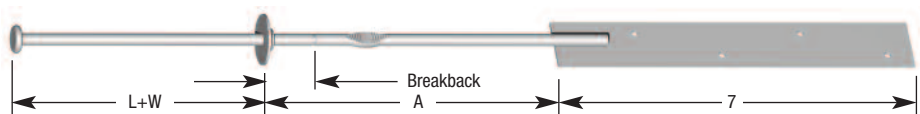
(1014) ST-9 SNAPTIE – SPANDREL PLATE

The ST-9 Spandrel Plate snaptie is manufactured with a 16 gauge steel plate with four 1/8" nail holes for nailing direct to formwork. This tie used similarly as the ST-6 nail-point tie. Available with metal washers or plastic cones.

SAFE WORKING LOAD	
TYPE	SWL (lbs)
ST-9	250

Safe working load is based on an approximate 2:1 safety factor.

To Order, Specify: quantity and type, L+W, and A.



(1020) ST-15 STEEL WEDGE

The ST-15 Steel Wedge accommodates either standard or heavy snapties and is designed with sufficient strength to distribute the form loads to the wales.

SAFE WORKING LOAD	
TYPE	SWL (lbs)
ST-15	3,250

Safe working load is based on an approximate 2:1 safety factor.

To Order, Specify: quantity and type.

Caution: The safe working load of the Steel Wedge can be affected by the position of the wedge on the tie end. Reference Steel Wedge Assembly Precautions below.

Steel Wedge Assembly Precautions:

Excessive spacing between the walers may cause the steel wedge to bend and result in the cone or washer on the snaptie to become embedded in the concrete. Breakback of the snaptie would be made difficult to accomplish.

Over-tightening the wedge may damage the head of the snaptie, the wedge slot and/or the plastic cone and result in a premature failure.

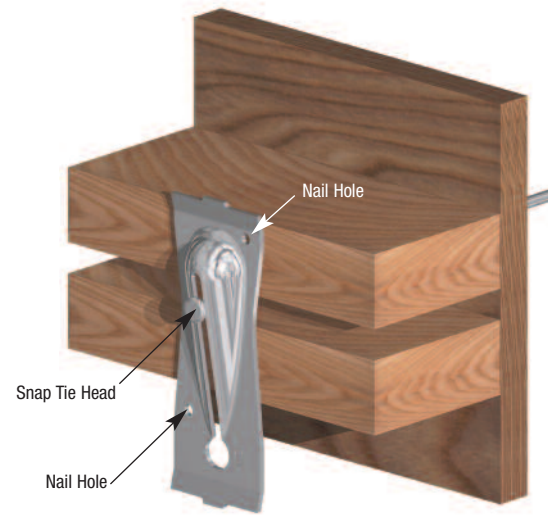
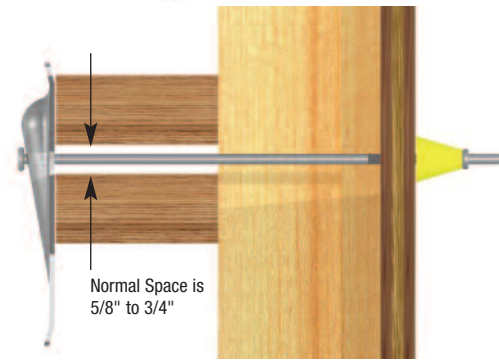
The Steel Wedge is designed to carry the load at the upper 2/3 of the wedge slot. Load applied too low on the wedge slot may cause the wedge to deform or break.

Nail holes are provided to allow the wedge to be firmly secured to the wales to prevent loosening during vibration.

(1030) ST-21 SNAPTIE WRENCH

The ST-21 Snaptie Wrench is used to quickly and easily break-back snapties. After the forming has been stripped the Snaptie Wrench captures the snaptie end. The tie is bent down to a position nearly parallel to the face of the concrete and a subsequent clockwise rotation of the wrench breaks the tie at the breakback point.

To Order, Specify: quantity and type.



Meadow Burke Snapties

(1015) ST-16 HEX HEAD SOCKET – 6-SIDED

The 3/8" drive ST-16 Hex Head Socket - 6 Sided fits securely over the head of the Hex Head Snaptie. Used primarily on the Single Waler System's short end snapties, a small turn of the socket snaps the tie end at the breakback point before the formwork is removed.



To Order, Specify: quantity and type.

(1022) ST-17 RESIDENTIAL SNAPTIE – PLASTIC CONES

(1023) ST-18 RESIDENTIAL SNAPTIE – METAL WASHERS

The ST-17 and ST-18 Residential Snapties are designed to be used on stem-type footing walls, foundation walls, and basement walls.

The ST-17 and ST-18 Residential Snapties are available with fixed 1-1/4" washers for a flush break back. This breakback routinely results in the wire being flush with the surface of the concrete or slightly protruding outside the surface. When a finished wall is desired, this tie is also available with in a 1" cone and a 1" break-back.

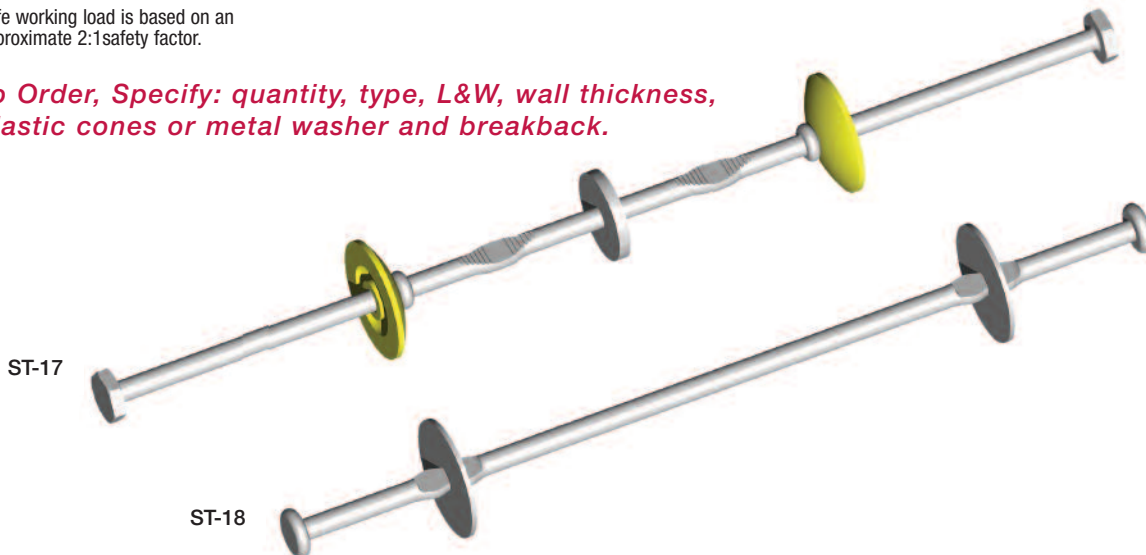
With an end dimension of 1-5/8", the Meadow Burke Residential Snapties can be used with ST-15 Steel Wedges. Frequently used with our Quick Cleat (see page 32).

SAFE WORKING LOAD

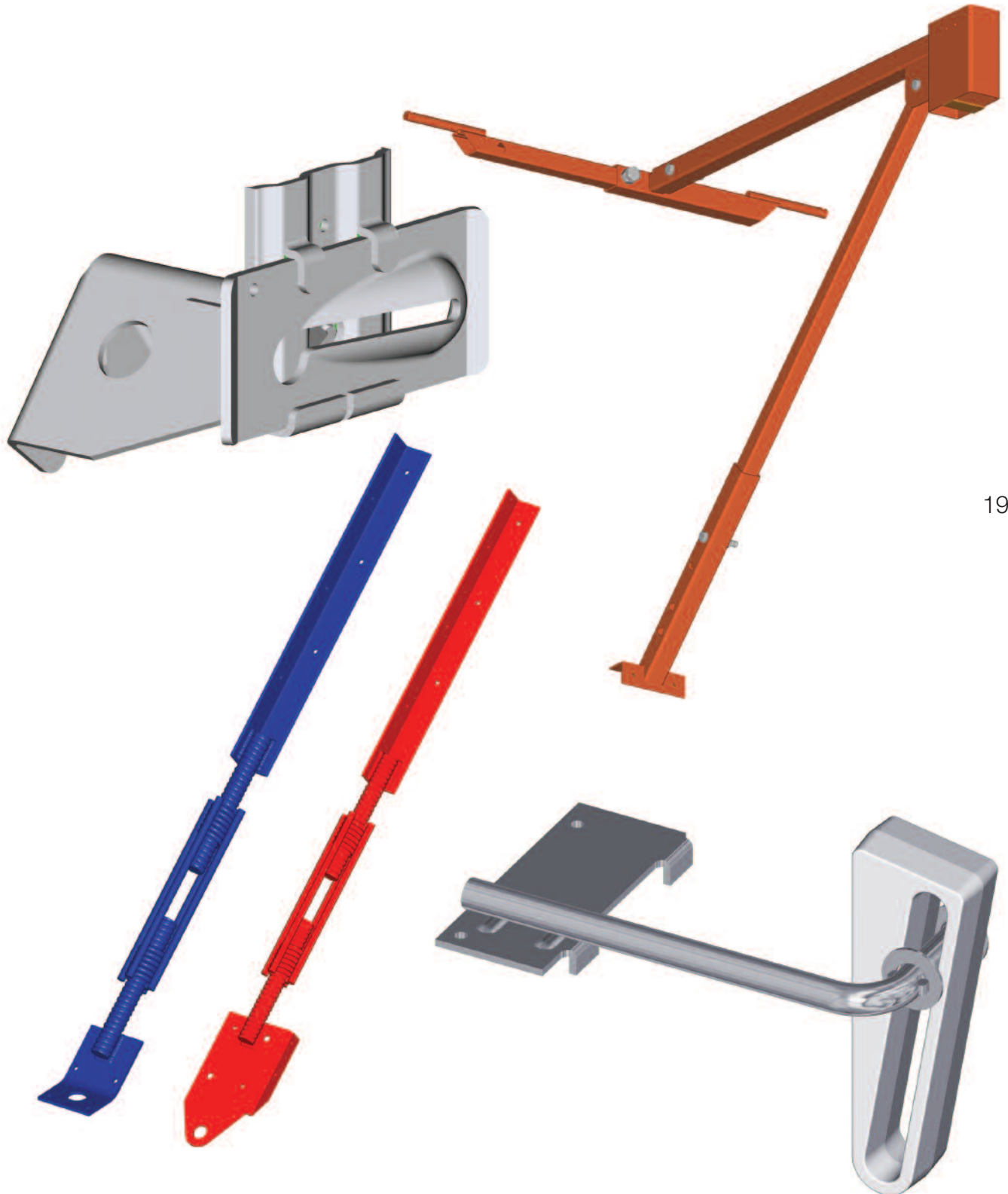
TYPE	SWL (lbs)
ST-17 / 18	2,250

Safe working load is based on an approximate 2:1 safety factor.

To Order, Specify: quantity, type, L&W, wall thickness, plastic cones or metal washer and breakback.



Single Waler System



Single Waler System

SINGLE WALER SYSTEM

The Meadow Burke Single Waler System is an economical, modern wall forming method designed for use on straight, battered, curved and rounded walls and with various beam forms.

Whether your forming needs are for a four-foot knee wall or a twelve-foot retaining wall, the Single Waler System can accommodate all of your hand-set light forming requirements.

The complete System includes:

- Plastic cone or loose metal washer snapties with 4-3/4" ends
- Single Waler Bracket
- Form Aligner Clamp for strongbacks
- Snap Jack for walls over 8' high
- Form Aligner

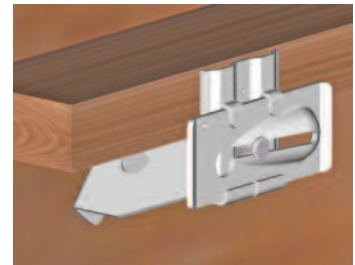
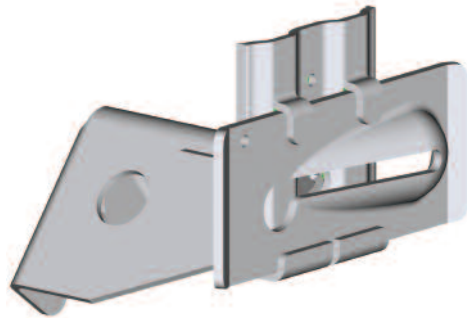


20 See Page 25 for typical installation sequence.

(1025) ST-10 SNAP BRACKET

The ST-10 Snap Bracket is the key element of the Single Waler System. It is fabricated from heavy gauge steel and cadmium-plated for high corrosion resistance. This versatile bracket can be installed horizontally, vertically or even inverted with a 2x4 kicker plate. The Snap Bracket uses 4-3/4" L&W snapties and its sliding wedge has a 5/8" adjustment range for minor lumber variation.

The brackets can be installed before or after the wales have been placed and have a unique waler alignment feature not available on other brackets. Nailing the bracket and/or wedge to the wales is not required, but nail holes are provided and strategically placed, if needed.



To Order, Specify: quantity and type.

(1026) ST-11 FORM ALIGNER CLAMP

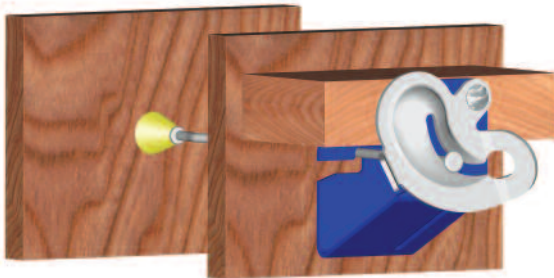
The ST-11 Form Aligner Clamp provides the Single Waler System with a fast and easy way to attach 2x4 strongbacks to the form. The galvanized clamp can be installed vertically or horizontally at any point on the form.

To Order, Specify: quantity and type.

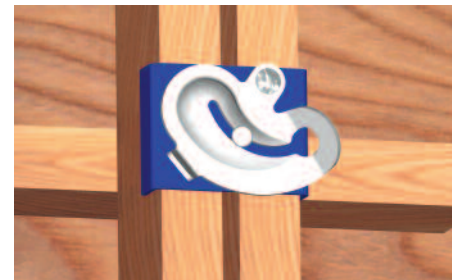




ST-12



ST-13



- (1027) ST-12 "A" Bracket
- (1028) ST-13 "C" Bracket

The ST-12 (Jahn) "A" Brackets by Meadow Burke are made of high strength steel with a cadmium plated eccentric and a rust-resistant painted body. Designed for use with a single 2x4 waler, the bracket is used to hold either a single horizontal wale, or a single vertical stud. The bracket can be installed either before or after walers are in place. Slots in the bracket allow it to slip over the snap tie end. Loading from the bracket is against the 2x4 instead of the plywood. The "A" bracket uses 4-3/4" L&W snap ties. Bracket will not loosen from internal vibration of the concrete.

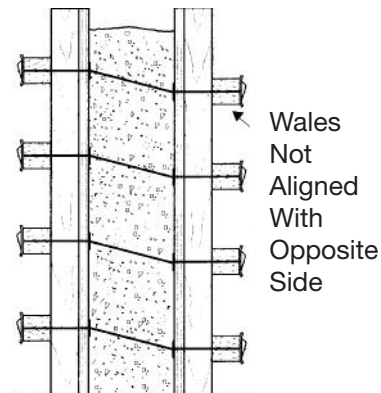
The ST-13 (Jahn) "C" Bracket by Meadow Burke is used to attach single 2x4 studs and double vertical strong-backs for formwork alignment. Also engineered for use with double wales to support a horizontal plywood joint. Uses 8-1/4" L&W snap ties.

To Order, Specify: Quantity and type.

WALER SPACING AND TIE ALIGNMENT

Misalignment of walers can cause Snapties to bend. Bent Snapties will not carry the expected design loads and a premature failure may result.

Wales must be continuous with joints staggered. Do not omit any walers. Omitting one of a double waler set will cause load redistribution and can result in a tie failure. All wales must be in place and all ties must be positioned properly.



Single Waler System

(1029) ST-14 SNAP JACK

The ST-14 Snap Jack is an integral part of the Single Waler System and is used when forming walls over 8' high to support a work platform. The steel one-piece unit quickly attaches to a Single Waler Bracket. Reference the installation sequence below. The Snap Jack has a built-in guardrail adapter to accept 2x4 guardrails. The lower support angle is provided with nail holes in order to nail the jack to the waler for added safety. This ST-14 Snap Jack works with both ST-10 Single Waler Bracket and ST-12 "A" Bracket.

Safe working load is 800 lbs. based on an approximate 4:1 safety factor. Do not, under any circumstances, place the Scaffold Jacks more than 8' apart. Consult a Meadow Burke Service Center with questions concerning special load design applications.

To Order, Specify: quantity and type.

SNAP JACK INSTALLATION

- 22
- 1) The Snap Jack must be installed between and into two (2) Single Waler Brackets.
 - 2) Insert one end of the Snap Jack bar into one of the Single Waler Brackets. Slide the bar through the bracket until the opposite end of the bar clears the second bracket.
 - 3) Next slide the Snap Jack bar into and through the second bracket. Make sure that the bar extends past each of the brackets at least two (2) inches. Center the Snap Jack between the two brackets and nail the lower support angle to the wale.

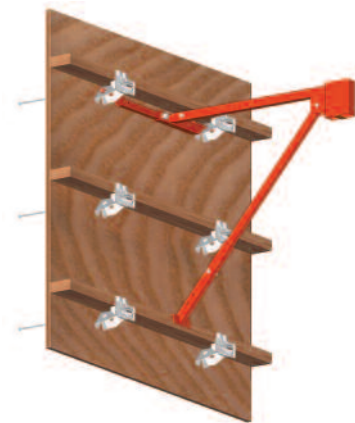
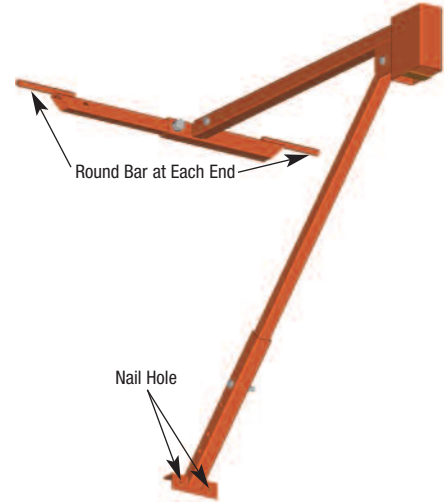
(1031) ST-27 FORM ALIGNER

(1032) ST-28 FORM ALIGNER

The ST-27 & ST-28 Form Aligner are designed to align vertical formwork. The ST-27 Standard brace consists of a length of angle iron, a self-cleaning turnbuckle and a steel toe plate. The angle iron is equipped with nail holes allowing the Form Aligner to be attached to a 2x4 or 2x6 to extend the reach of the ST-27. The turnbuckle is fabricated with coil threads for quick and easy adjustments and the steel toe plate can accept a round steel stake, be nailed to a wood stake or be inverted and nailed directly to a stud or wales. The ST-28 Form Aligner is equipped with a spade-type toe plate designed for use with modular forms and wedge bolts.

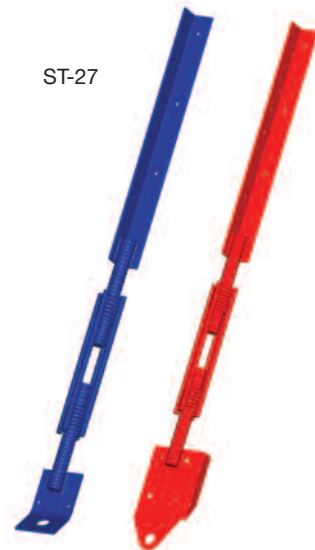
The safe working load for the Form Aligner is determined by the method of attachment and the extension lumber used.

To Order, Specify: quantity and type.



ST-27

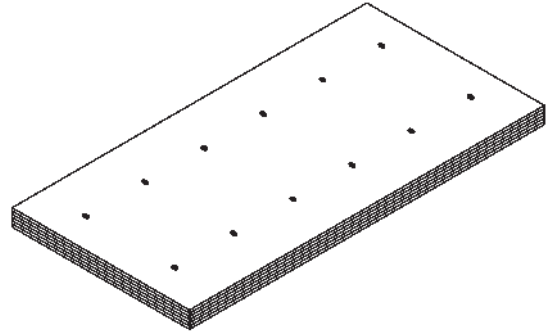
ST-28



SINGLE WALER FORMING APPLICATION

Gang Drilling Plywood

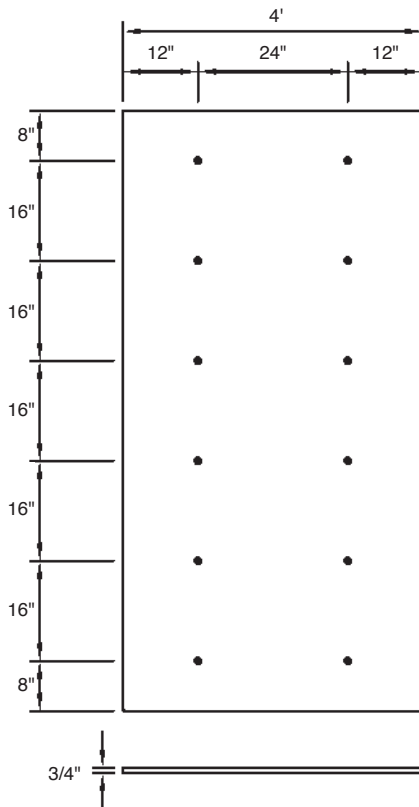
Gang drilling is a quick and economical way to prepare plywood for the single waler forming application. Simply stack the plywood and drill the tie holes with a 5/8" drill bit. The System works equally well with 5/8" or 3/4" plywood. The wedge take-up in the bracket will compensate for the difference in plywood thickness.



SINGLE WALER FORMING APPLICATION

Common Spacing Layouts

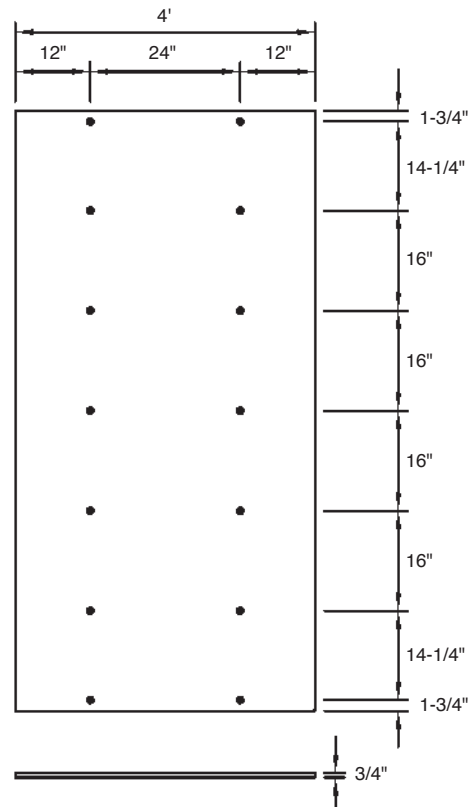
Maximum allowed form pressure is 4'-0" per hour at 70° F. Recommended 9/16" drill bit for form hole. Plywood thickness for this diagram is 3/4". Standard waler spacing is 16".



12 Holes

You can minimize the amount of ties required with this standard spacing layout. You can also eliminate the need of a starter plate on 8' walls.

Note: For $l/360$ deflection, use 12" waler spacing.



14 Holes

This pattern is required for walls over 8' or when panels are to be attached to a kicker plate with inverted brackets. With this panel layout, the top waler is used to start the next tier of panels.

Single Waler System

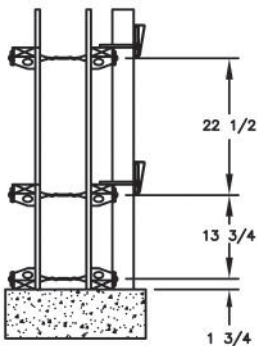
SINGLE WALER BRACKET INSTALLATION

Wall Height Considerations

Snaptie spacing is dependent upon form pressure and the type of forming used. Below are a few typical wall form spacing diagrams for various wall heights with pertinent notes for each height.

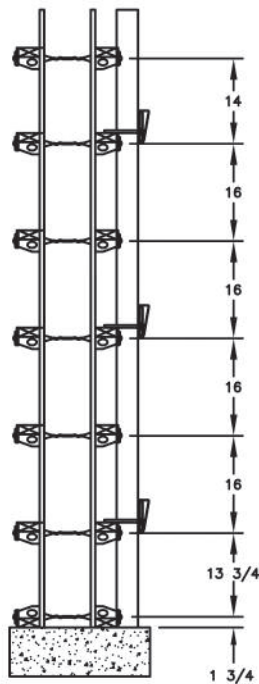
Wall Form 4 ft. High

- Install 4'x8' plywood horizontally. Attach 2x4 walers with horizontal tie-spacing of 2'-0" on center.



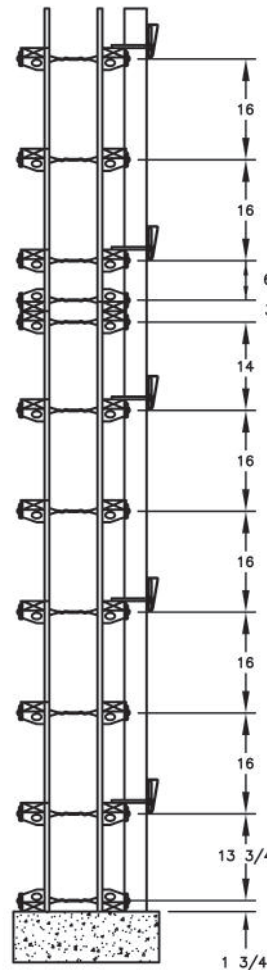
Wall Form 8 ft. High

- Attach strongbacks vertically to full height of form.
- Use proper spacing to engage next row of ties, while attaching waler with form aligner clamps.
- Easily attach plywood and secure with wrench head snapties and single waler forming brackets.



Wall Form Over 8ft. High

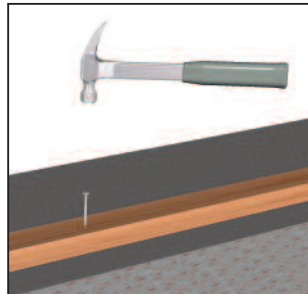
- Single or Double 2x4 strongbacks with support clamps fastened to every other waler provides a stable alignment for walls over 10 ft.
- Nail a waler to top of last waler at plywood joint.
- Nail aligner brace to vertical strongback at 1/3 height from top of form.
- Only one side needed for bracing.
- Form aligner brace spacing at 6 ft. on center.



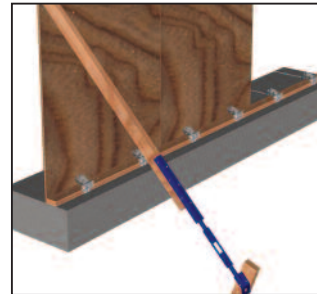
SINGLE WALER BRACKET INSTALLATION Typical Installation Sequence



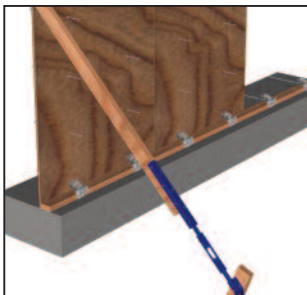
1: Stack standard 3/4" or 5/8" plywood sheets. Drill with 9/16" drill bit.



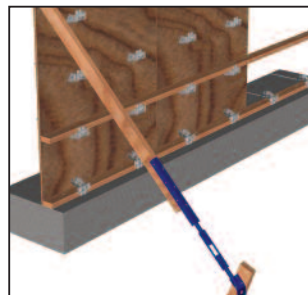
2: Nail 2x4 kicker plates to concrete footing with concrete nails.



3: Nail vertical plywood panels to 2x4 kicker plate. (Or attached to inverted single waler brackets on kicker plate - support panels temporarily, as needed.)



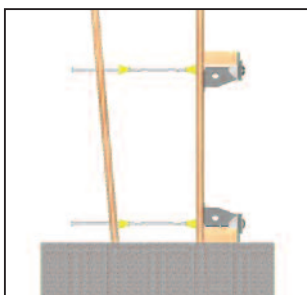
4: Place Snapties through pre-drilled panels from inside of form.



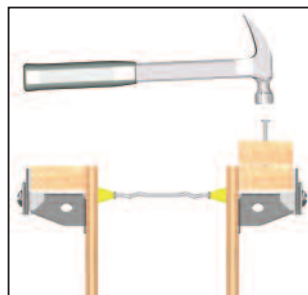
5: Attach Single Waler Brackets on snapties. Do not need to tighten an entire row before installing 2x4 waler. Repeat process for following rows.



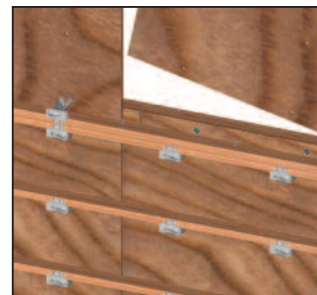
6: Tap Single Walers with hammer to tighten. Place 2x4 strongbacks (if desired) and secure with Form Aligner Clamps.



7: Install panels over snapties on opposite side and repeat steps 5 and 6 .



8: (OPTIONAL) For wall over 8 ft. high. Nail a 2x4 on top of last waler to act as kicker plate.



9: Following step 8, align above plywood panels against new top kicker plate and repeat steps 3 through 7. (Scaffolding required) See Snap Jack instructions.

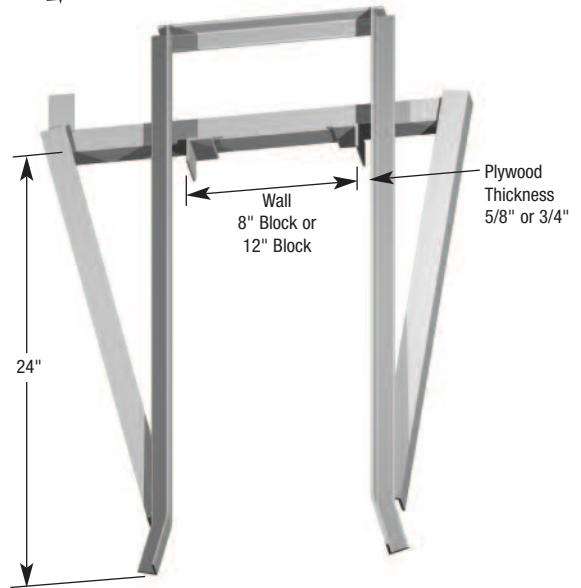
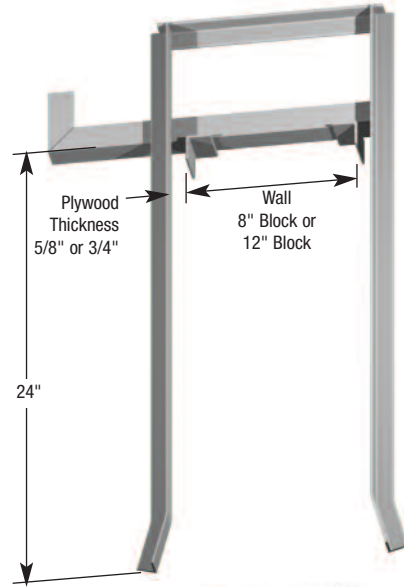
Single Waler System

(1058) ST-32 MASONRY BEAM CLAMP – Standard

The ST-32 Standard Beam Clamp is used for forming poured concrete lintels with Masonry block walls. Meadow Burke ST-32 Standard Beam Clamp fits over 5/8" or 1/4" plywood form and is manufactured to form lintel beam over openings in an 8" block wall or 12" block wall. Meadow Burke design provides for a double 2x4 aligner beam. Made from 1-1/4" x 1-1/4" x 1/8" steel angle.

ST-32 MASONRY BEAM CLAMP		
Number	Wall Thickness	Plywood Thickness
1	8"	5/8"
2	8"	3/4"
3	12"	5/8"
4	12"	3/4"

To Order, Specify quantity, type and number.

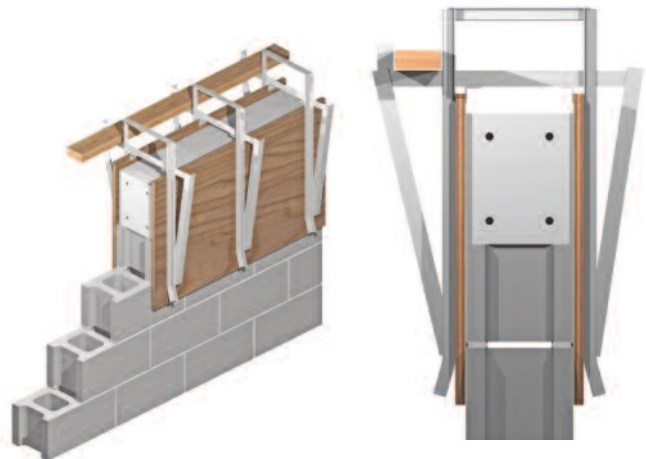


(1059) ST-33 MASONRY BEAM CLAMP – Heavy with Brace

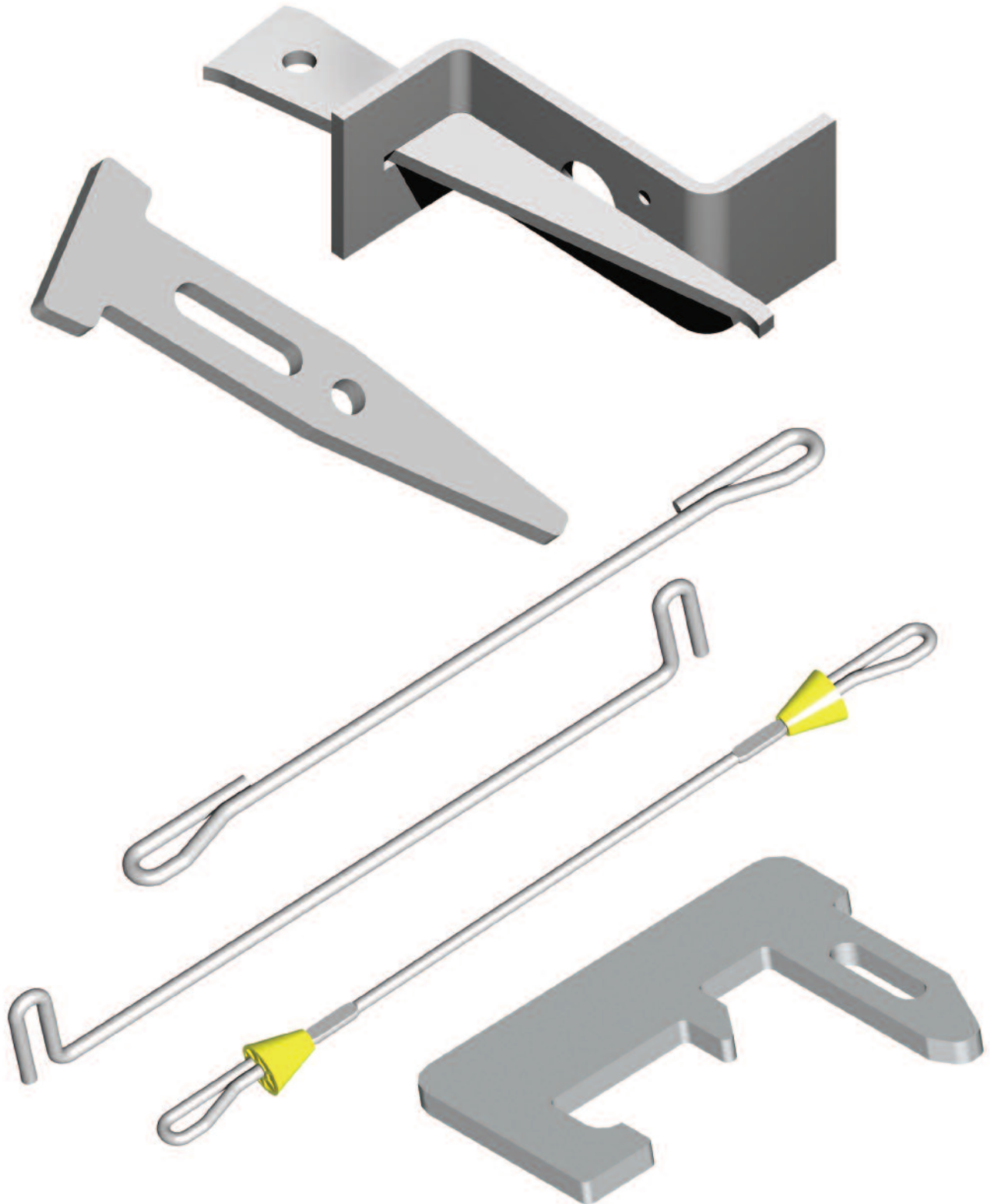
The ST-33 Heavy Beam Clamp is designed for same forming as ST-32, but is stronger due to addition of external braces to limit deflection. Also designed to fit over 5/8" or 3/4" plywood form and is manufactured to form lintel beam over 8" block wall or 12" block wall. Meadow Burke design provides for a double 2x4 aligner beam. Made from 1-1/4" x 1-1/4" x 1/8" steel angle.

ST-33 MASONRY BEAM CLAMP		
Number	Wall Thickness	Plywood Thickness
1	8"	5/8"
2	8"	3/4"
3	8"	7/8"
4	12"	5/8"
5	12"	3/4"
6	12"	7/8"

To Order, Specify quantity, type and number.



Panel Ties/Panel Tie Accessories



Panel Ties and Accessories

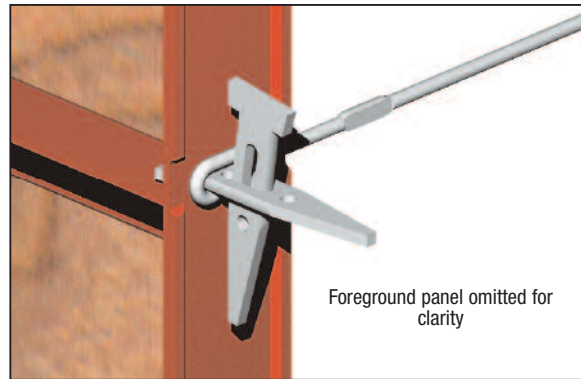
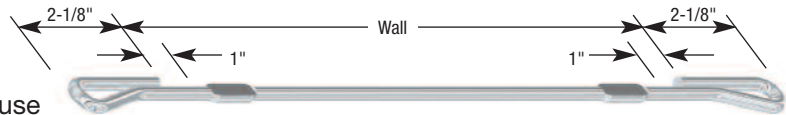
(1045) ST-23 LOOP TIE – STANDARD
(1047) ST-24 LOOP TIE – HEAVY

The ST-23 & ST-24 Loop Tie is designed for use with modular forming systems. It is available in standard and heavy versions and is supplied with 2-1/8" ends to accept the standard modular form wedge bolt. The ST-23 Standard and ST-24 Heavy Loop Ties come with a 1" breakback and without spreaders.

SAFE WORKING LOAD	
TYPE	SWL (lbs)
ST-23 STD.	2,250
ST-24 HVY.	3,000

To Order, Specify: quantity, type and wall thickness.

Safe working load is based on an approximate 2:1 safety factor.



(1049) ST-25 GANG TIE – STANDARD
(1051) ST-26 GANG TIE – HEAVY

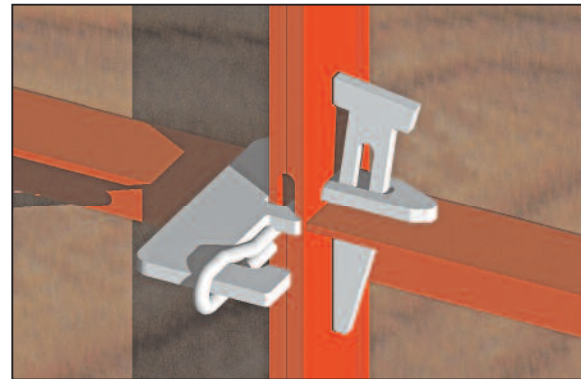
28

The fabrication and use of the ST-25 & ST-26 Gang Tie is similar to the Loop Tie, except the end dimension has been increased to 4-15/16". The longer end dimension is designed to accept the typical modular forming gang wedge bolt. The longer end dimension allows the gang tie to be broken back before the formwork is stripped.

SAFE WORKING LOAD	
TYPE	SWL (lbs)
ST-25 STD.	2,250
ST-26 HVY.	3,000

To Order, Specify: quantity, type and wall thickness.

Safe working load is based on an approximate 2:1 safety factor.



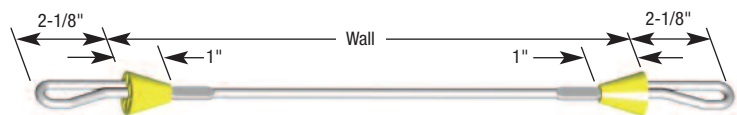
(1055) ST-29 LOOP TIE – PLASTIC CONE
(1057) ST-30 LOOP TIE – PLASTIC CONE H/D

The ST-29 & ST-30 Plastic Cone Loop Ties are similar to the standard Loop Ties, but are equipped with 1" plastic spreader cones and 1" breakback.

SAFE WORKING LOAD	
TYPE	SWL (lbs)
ST-29 STD.	2,250
ST-30 HVY.	3,000

To Order, Specify: quantity, type and wall thickness.

Safe working load is based on an approximate 2:1 safety factor.

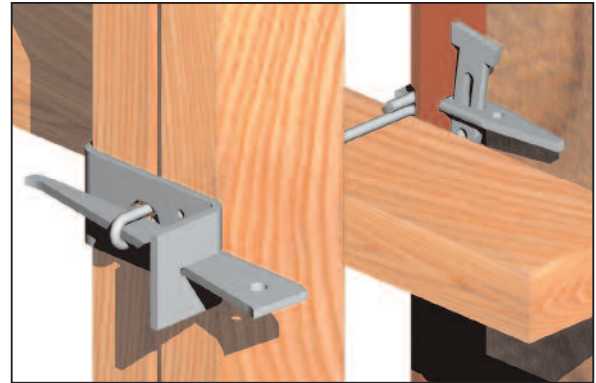
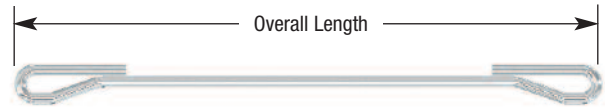


(1060) SB-1 STRONGBACK TIE

The SB-1 Strongback Tie is designed for use in conjunction with a Waler Holder to attach the wales and double vertical strongbacks to modular forms. Strongback Ties are available in three lengths to accommodate various lumber combinations, as noted in the table.

Lumber Dimension	Overall Length
2x4 Wales plus 2x4 Strongbacks	9-3/4"
2x4 Wales plus 2x6 Strongbacks	11-5/8"
2x6 Wales plus 2x6 Strongbacks	13-1/2"

To Order, Specify: quantity, type and overall length.

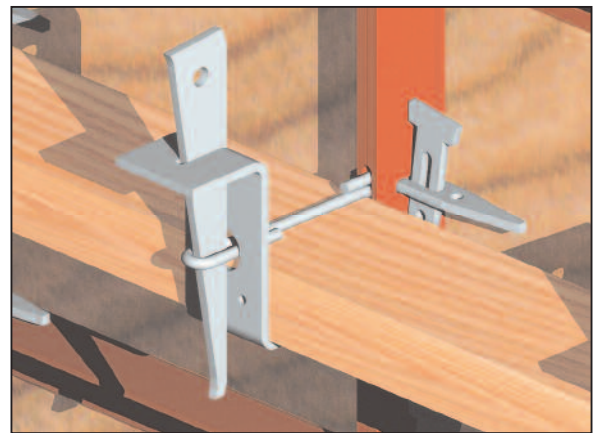
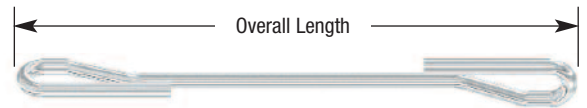


(1065) WT-1 WALER TIE

The WT-1 Waler Tie is similar to the Strongback Tie but has its ends turned 90° to each other. This allows the use of a Waler Holder to attach double wales to the modular form. The Waler Tie is available in two lengths to accommodate 2x4 and 2x6 double horizontal wales.

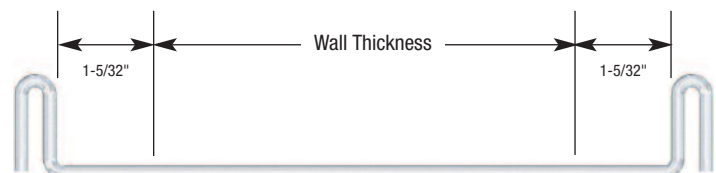
Lumber Dimension	Overall Length
Double 2x4 Wales	6-3/16"
Double 2x6 Wales	8-1/32"

To Order, Specify: quantity, type and overall length.



(1070) BT-1 BASE TIE

The BT-1 Base Tie is designed to span two opposite modular forms and the enclosed wall thickness at the bottom of the form and maintain the proper wall dimension.



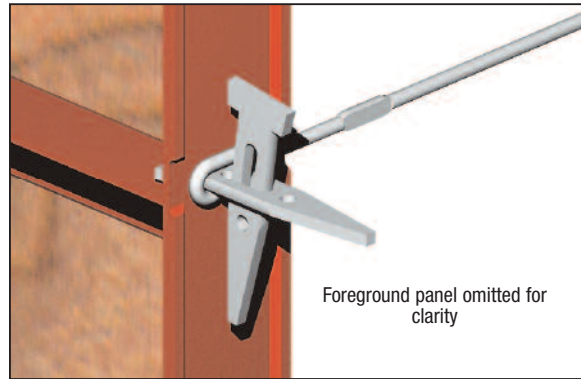
To Order, Specify: quantity, type and wall thickness.

Panel Ties and Accessories

(1085) FT-15 WEDGE BOLT

The FT-15 Wedge Bolt is designed to be used in pairs to securely attach and hold adjacent modular forms and a loop tie together.

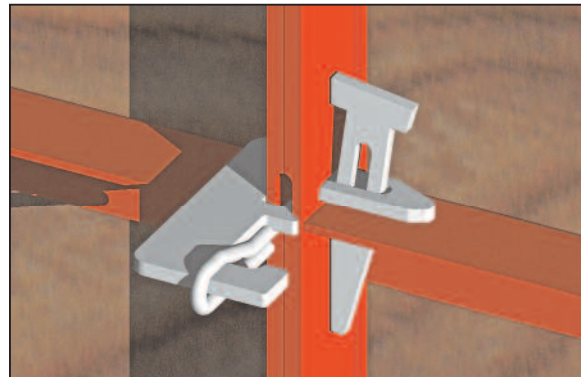
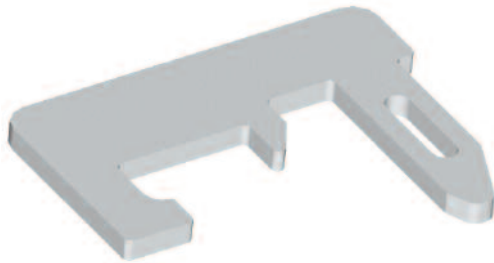
To Order, Specify: quantity and type.



(1087) GW-16 GANG WEDGE BOLT

The GW-16 Gang Wedge Bolt is designed to hold adjacent modular forms together in combination with a Gang Tie. This provides a means of tie breakback prior to form removal.

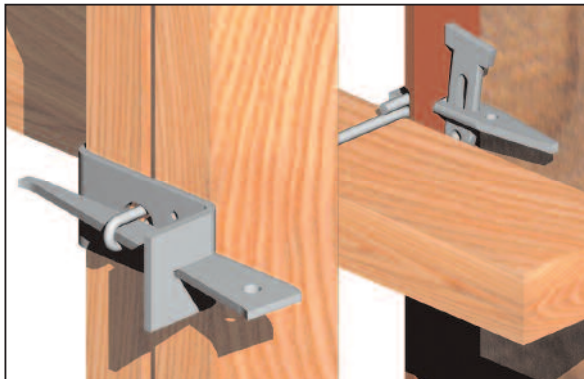
To Order, Specify: quantity and type.



(1090) WH-1 WALER HOLDER

The WH-1 Waler Holder is designed to attach to a modular form with a Waler Tie and securely support and tie double walers to the form.

To Order, Specify: quantity and type.

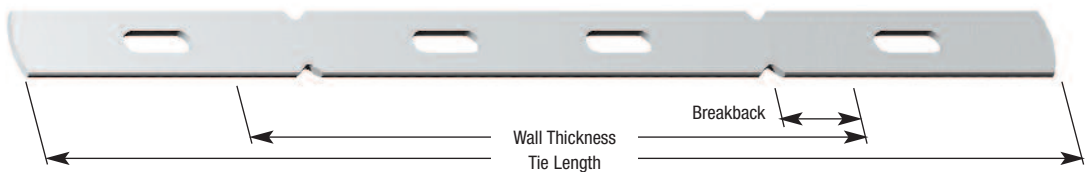


- (1075) FT-1 FLAT TIE – STANDARD
- (1077) FT-1 FLAT TIE – HEAVY

The FT-1 Flat Tie is designed for use on most standard modular forming systems. Both the Standard and Heavy versions utilize Wedge Bolts to secure the formwork. Standard and Heavy Flat Ties are available in lengths 6" to 36" in 2" increments. Breakback is 1/4". Other lengths available on special order.

SAFE WORKING LOAD	
TYPE	SWL (lbs)
FT-1 STD.	2,250
FT-1 HVY.	3,000

Safe working load is based on an approximate 2:1 safety factor.



To Order, Specify: quantity, type and wall thickness.

- (1079) FT-3 FLAT TIE – DUO - STANDARD
- (1080) FT-3 FLAT TIE – DUO - HEAVY

The FT-3 Duo Flat Tie is similar to the Standard Flat Tie (above) in design and use, but has two slot holes outboard of the breakback point. This feature allows for the combination use of modular and wood forming elements. Duo Flat Ties are available in standard and heavy versions and have a normal 1/4" breakback.

SAFE WORKING LOAD	
TYPE	SWL (lbs)
FT-3 STD.	2,250
FT-3 HVY.	3,000

Safe working load is based on an approximate 2:1 safety factor.



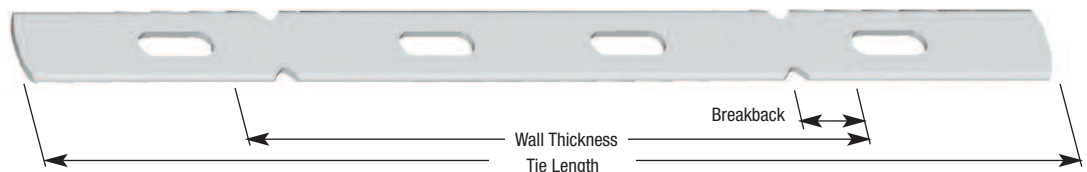
To Order, Specify: quantity, type and wall thickness.

- (1081) FT-4 FLAT TIE – TYPE M - STANDARD
- (1082) FT-4 FLAT TIE – TYPE M - HEAVY

The FT-4 Flat Tie Type M is similar in design, construction and use to the Standard (FT-1) Flat Tie, but has ends that are 5/8" shorter. Type M Flat Ties are available in standard and heavy versions and have a 1/4" breakback.

SAFE WORKING LOAD	
TYPE	SWL (lbs)
FT-4 STD.	2,250
FT-4 HVY.	3,000

Safe working load is based on an approximate 2:1 safety factor.



To Order, Specify: quantity, type and wall thickness.

Panel Ties and Accessories

(1095) ST-35 QUICK CLEAT - STAMPED

(1096) ST-36 QUICK CLEAT - WIRE

The ST-35 and ST-36 Quick Cleats are used to form foundation footers up to 32" high. The maximum center-to-center panel cleat spacing is 32" for panels up to 24". For panels over 24", up to and through 32", cleat spacing is limited to 24" maximum on center-to-center. Snap ties should be used with 3/4" thick panels 18" or higher, as extreme deflection can occur.

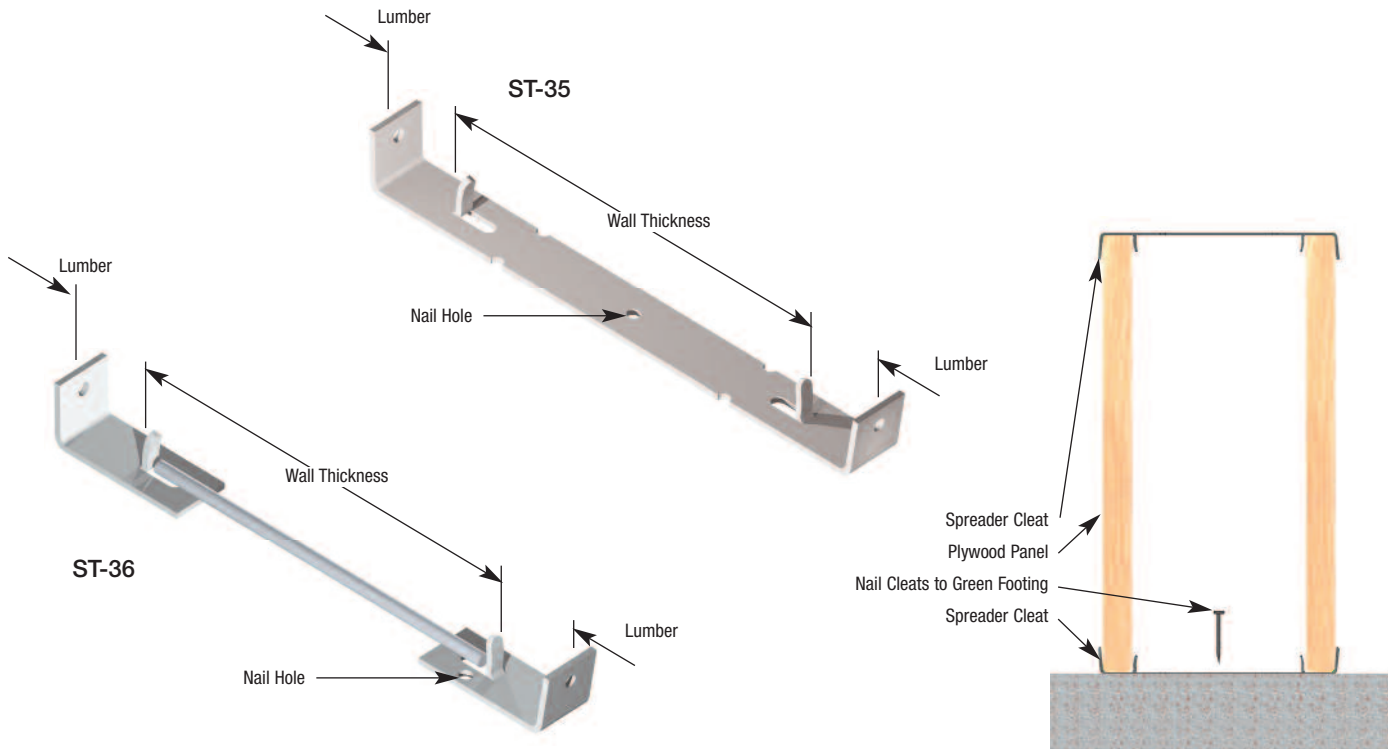
Two types of Quick Cleats are available: A stamped metal cleat, ST-35, is available in 6" and 8" wall thickness sizes for both 3/4" and 1-1/8" lumber ends. The second version cleat, ST-36, provides the two lumber end attachments connected by wire strut. This type is used for wall thicknesses greater than 5", with a choice of 3/4", 1-1/8", 1-5/8" and 2-1/4" lumber ends.

ST-35 & ST 36 QUICK CLEAT DATA			
Wall Thickness	Plywood Thickness	Pours Up to 24" Max. Spacing	Pours Up to 32" Max. Spacing
6"	3/4, 1-1/8", 1-5/8"	32"	24"
8"	3/4, 1-1/8", 1-5/8"	32"	24"
10"	3/4, 1-1/8", 1-5/8"	32"	24"
12"	3/4, 1-1/8", 1-5/8"	32"	24"
14"	3/4, 1-1/8", 1-5/8"	32"	-
18"	3/4, 1-1/8", 1-5/8"	32"	-

Note: Cleat spacing and rates of pour are the maximum permissible for each cleat size. Meadow Burke will not be responsible or liable for form failure where maximum cleat spacing or recommended rate of pour has been exceeded.

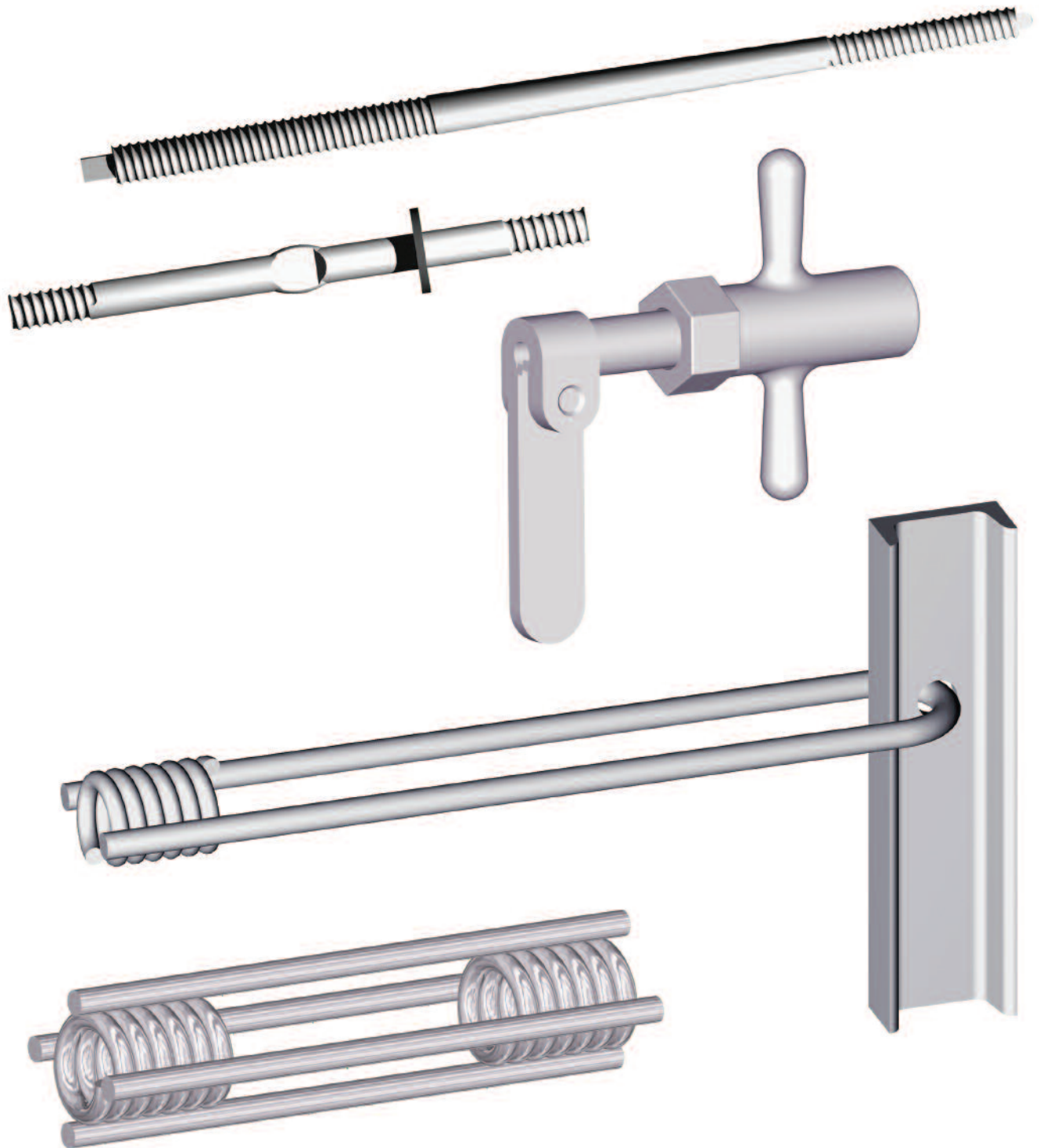
32

Safe working load of 750 lbs is based on an approximate 2:1 safety factor.



To Order, Specify: Quantity, type, wall thickness, and end lumber dimension.

Light, Medium and Heavy Forming Products



Light Forming Miscellaneous

(1120) ST-19 PANEL LOCK TIE

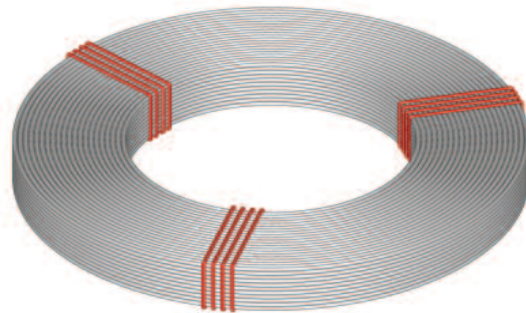
The ST-19 Panel Lock Tie is used in conjunction with a Steel Wedge to quickly and securely lock adjacent form panel 2x4 studs together. The standard length is 3-1/2" with other lengths available on special order.



To Order, Specify: quantity, type and length.

(1130) RD-24 PENCIL ROD

The RD-24 Mild steel Pencil Rod is available in 1/4" diameter cut to 10', 20' or other specified length or in coils of approximately 600 feet (100 lbs.). 3/8" and 1/2" Pencil Rod are also available on special order.



34 *To Order, Specify: quantity, type and diameter.*

(1135) RC-22 FORM CLAMP

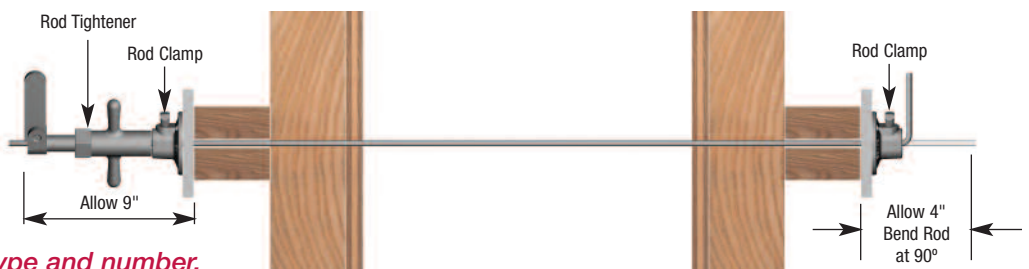
The RC-22 Form Clamp is designed for use with the Pencil Rod, above, or other similar mild steel bar. The clamp is available in three sizes to accept 1/4", 3/8" and 1/2" diameters. The Form Clamp is especially useful when unusual forming conditions exist, such as battered walls or walls of varying thickness.



The safe working load of the Form Clamp is dependent on the setscrew being properly tightened and the pencil rod being bent 90° at the back of the clamp.

SAFE WORKING LOAD			
NUMBER	TYPE	WIRE SIZE	SWL (lbs)
1	RC-22	1/4"	1,125
2	RC-22	3/8"	2,250
3	RC-22	1/2"	3,750

Safe working load is based on an approximate 2:1 safety factor.

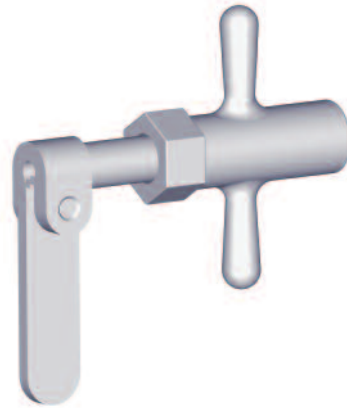


To Order, Specify: quantity, type and number.

(1140) RD-25 PENCIL ROD TIGHTENER

The RD-25 Pencil Rod Tightener is used in conjunction with the pencil rod/form clamp assembly to draw the formwork into position and hold it securely while the rod clamp set screw is tightened. The Tightener is available in 1/4", 3/8" and 1/2" diameters to match the pencil rod diameter being used.

To Order, Specify: quantity, type and diameter.



(3055) RD-27 PLASTIC TUBING

The RD-27 Plastic Tubing is available for use when pencil rod must be removed from set concrete. The tubing is cut to size and slipped over the pencil rod to act as a sleeve to aid in the rod removal process. Plastic Tubing is stocked in 1/4", 3/8", 1/2", 3/4" and 1" diameters in 5' lengths.

To Order, Specify: quantity, type and diameter.



Medium and Heavy Forming Products

(2001) CT-1 COIL TIE - WELDING

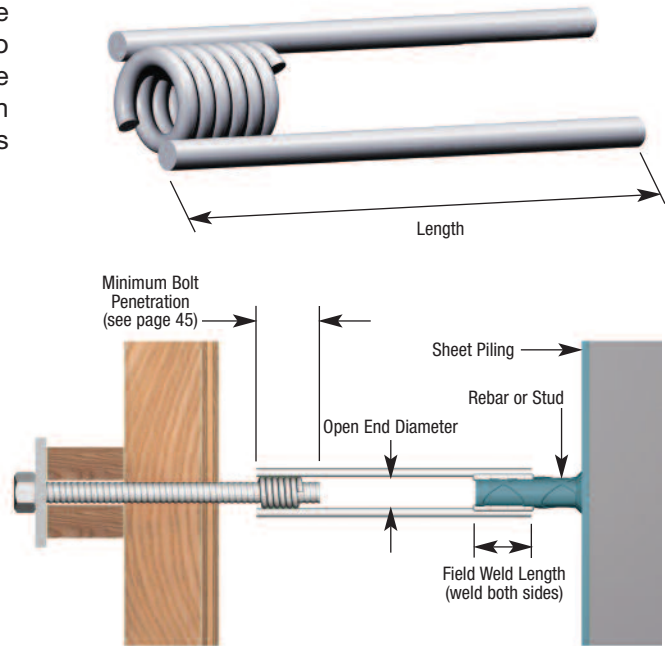
The versatile and economical two strut CT-1 Coil Tie is available with one end open to allow the struts to be field welded when unusual forming situations are encountered. The Welding Coil Tie is available in 1/2", 3/4" and 1" diameters and in overall lengths as required.

CT-1 COIL TIE DATA					
Coil Bolt Diameter	Tie SWL (lbs)	Strut Wires		Field Weld Lgth (min)	Open End Diameter
		Dia.	AISI No.		
1/2"	6,750	.306	1008	1"	3/4"
3/4"	9,000	.375	1018	1-1/2"	1"
1"	15,000	.440	1035	2"	1-3/8"

Safe working load is based on an approximate 2:1 safety factor.

Actual safe working load of the Welding Coil Tie is dependent on the quality of the field weld. See AWS D1.4 for welding specifications.

To Order, Specify: quantity, type, diameter and length.



(2002) CT-2 COIL TIE - TWO STRUT

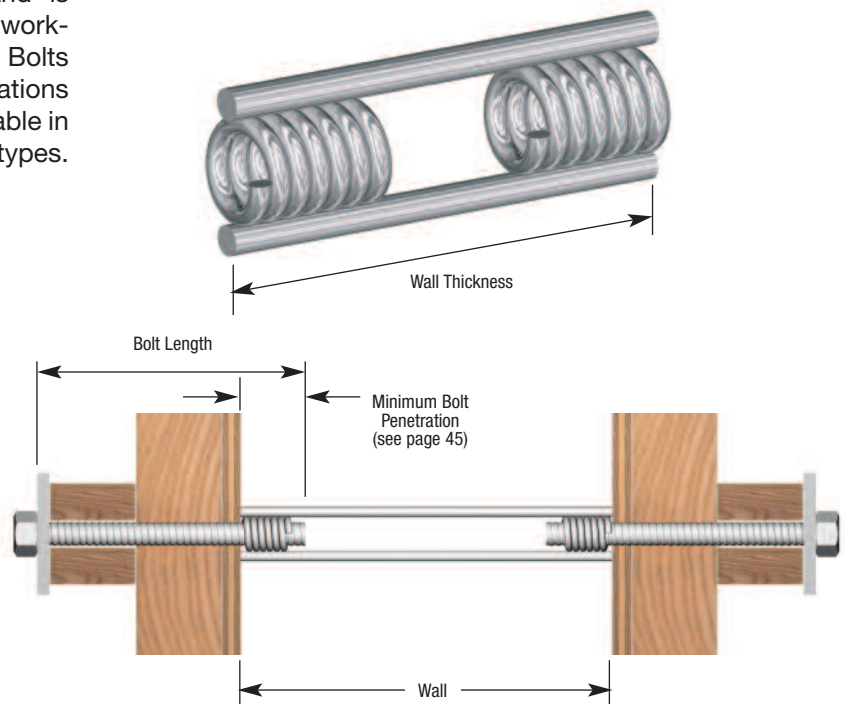
The CT-2 Coil Tie is fabricated with two struts and two self-cleaning, fast threading coils and is available in a broad range of sizes and safe working loads. The versatile tie is used with Coil Bolts or Coil Rod to handle the many forming variations encountered. The Two Strut Coil Tie is available in 1/2" to 1" diameters in standard and heavy types.

CT-2 COIL TIE DATA		
TYPE	SWL (lbs)	APPROX ULT (lbs)
1/2" Standard	4,500	9,000
1/2" Heavy	6,750	13,500
3/4" Standard	6,750	13,500
3/4" Heavy	9,000	18,000
1" Standard	13,500	27,000
1" Heavy	15,000	30,000

SWL provides an approximate safety factor of 2:1.

NOTE: If electro-plating of coil ties is required, special procedures may be necessary to prevent hydrogen embrittlement effects. Specify when placing order.

To Order, Specify: quantity, type, diameter and length (wall thickness).



(2004) CT-4 COIL TIE – FOUR STRUT

The CT-4 Coil Tie - Four Strut is similar in form and use to the Coil Tie - Two Strut, but has two additional struts to develop higher load capacities. Coil Tie - Four Strut is available in 1" diameter standard, 1-1/4" standard and 1-1/4" heavy configurations.

CT-4 COIL TIE DATA		
TYPE	SWL (lbs)	APPROX ULT (lbs)
1" Standard	18,000	36,000
1-1/4" Standard	27,000	54,000
1-1/4" Heavy	30,000	60,000

To Order, Specify: quantity, type, diameter, standard or heavy and length (wall thickness).

Safe working load is based on an approximate 2:1 safety factor.

NOTE: If electro-plating of coil ties is required, special procedures may be necessary to prevent hydrogen embrittlement effects. Specify when placing order.

CAUTION: When pouring walls over 8' high, consider using the next higher load rated coil tie for additional safety factor. Form pressures tend to be greater than expected or planned when pouring higher walls. See Page 2 for additional safety information.

(2005) CT-2/CT-4 Coil Ties - Cone Fast

The CT-2/CT-4 Coil Ties - Cone Fast are fabricated with longer coils that extend beyond the ends of the struts to allow threaded plastic cones to be attached to the Coil Tie. The cones provide a spreader function for the tie as well as a specific setback. They also act as a centering guide when attaching the coil bolts during setup.

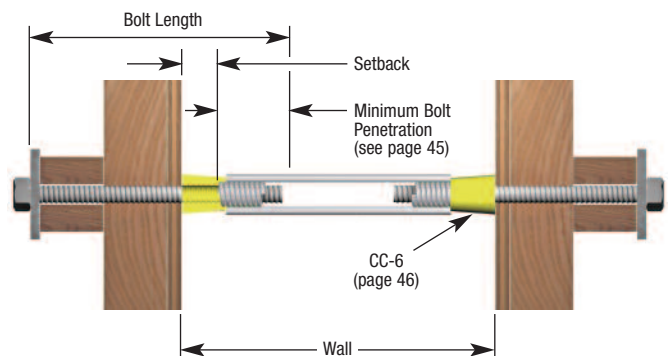
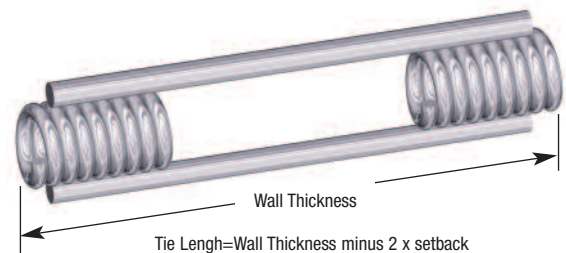
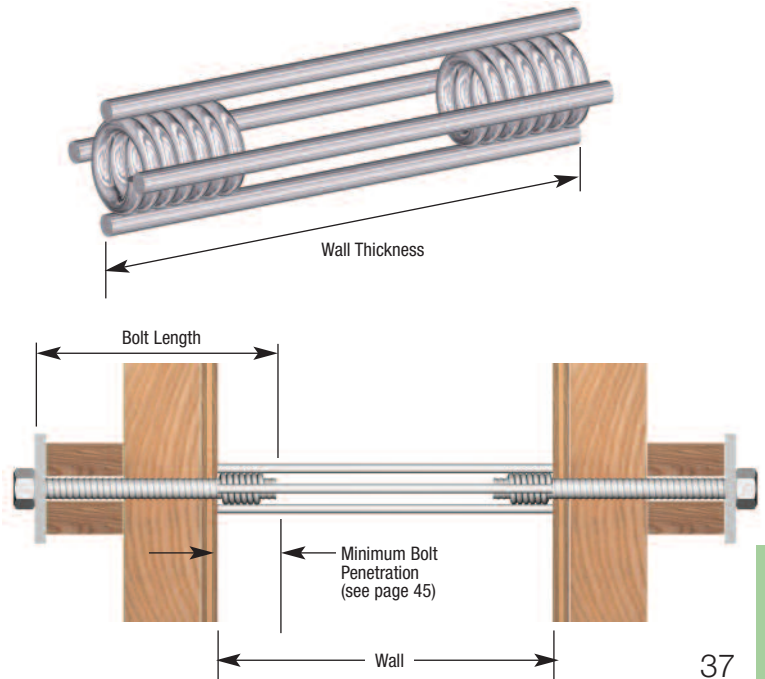
Cone-Fast Coil Tie recesses left by the plastic cones provide an architectural effect on the face of the concrete and the setback places the tie back away from the concrete surface to reduce surface corrosion staining.

Two strut CT-2 Coil Tie - Cone Fast is available in 1/2", 3/4", and 1" standard and heavy types. The four strut CT-4 Coil Tie - Cone Fast version is available in 1" and 1-1/4" standard and 1-1/4" heavy.

Safe working loads of the Coil Tie - Cone-Fast are the same as the comparable Two Strut and Four Strut Coil Ties. For additional safety information, refer to page 2.

To Order, Specify: quantity, type, diameter, standard or heavy, tie length, wall thickness and setback.

NOTE: To determine length, subtract two times the setback from the wall thickness.

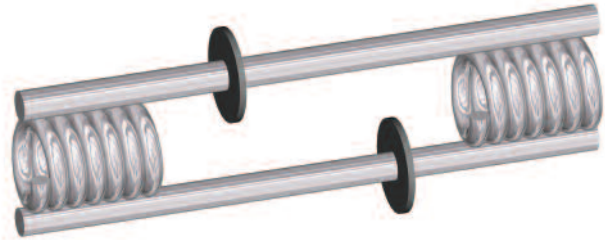


Medium and Heavy Forming Products

(2009) COIL TIE – WATER SEAL

All two-strut and four-strut Coil Ties are available with a neoprene rubber washer installed on each wire strut. The neoprene washers help prevent the seepage of water along the wire struts. In damp or wet conditions this is a beneficial addition to the form tie system.

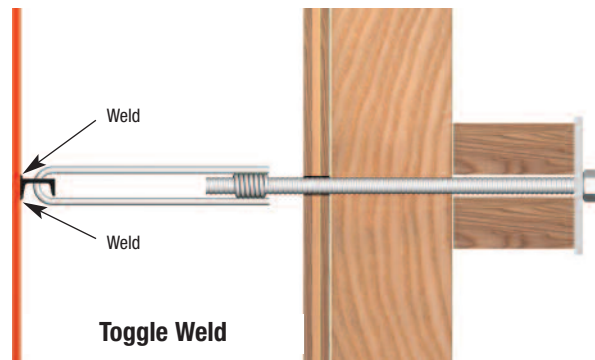
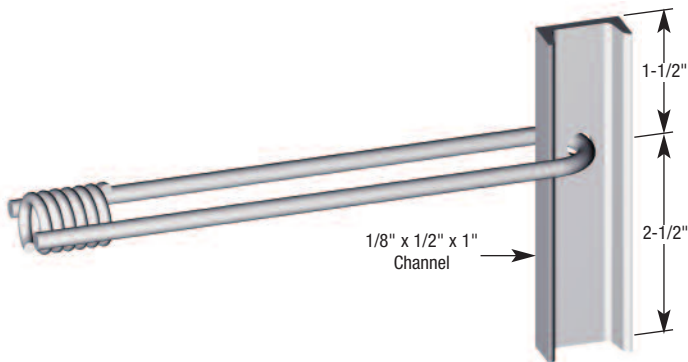
To Order, Specify: Water Seal Washers when ordering the Coil Ties.



(2010) CT-37 COIL TIE – TOGGLE

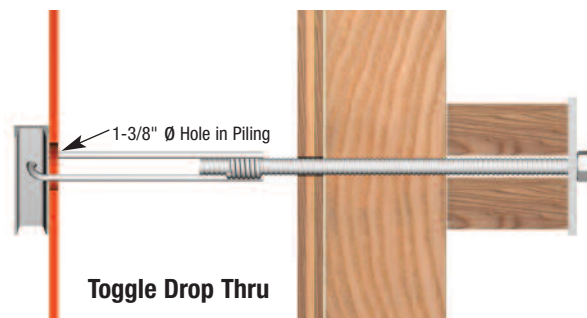
The CT- 37 Coil Tie - Toggle is fabricated with a short length of steel channel on the looped strut wire. They are typically used in one-sided forming operations, such as when forming against steel piling. The channel can be inserted through a 1-3/8" diameter hole in the steel piling and toggled to provide support for the formwork or it can be rotated and securely welded to the steel piling to serve the same function. The Toggle Coil Tie is available only in 1/2" diameter.

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Toggle Weld

When used in the welded application the unit's safe working load is dependent on the quality and strength of the welding operation. The channel is made from A36 steel and should be welded on both sides with the appropriate welding rod.



Toggle Drop Thru

SAFE WORKING LOAD	
TYPE	SWL (lbs)
CT-37	3,750

Safe working load is based on an approximate 2:1 safety factor.

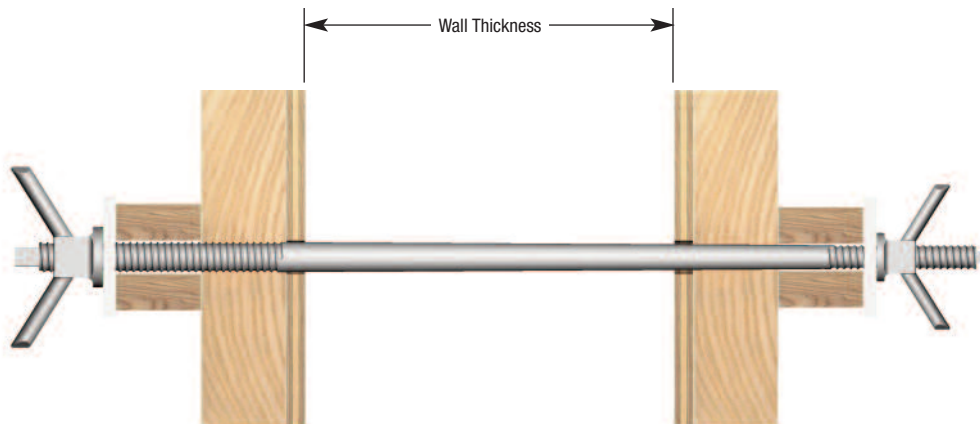
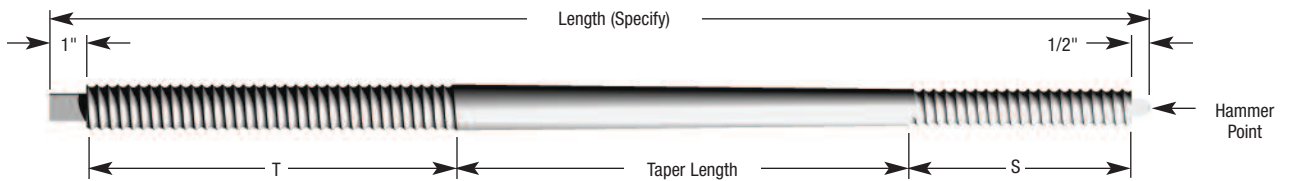
To Order, Specify: quantity, type and length.

(2020) HD-9 TAPER TIE

The HD-9 Taper Tie manufactured from hi-strength steel with one size coil thread at one end and tapering to a smaller size coil thread at the opposite end. The coil thread provides fast erection and stripping and the taper allows the tie to be easily extracted from the concrete. A light bond preventing grease will help facilitate tie removal. The reusable tie is equipped with a square end for wrench turning capability and a hammer end to aid in the extraction process. Standard sizes are shown in the Table, other lengths are available on special order.

HD-9 TAPER TIE DATA					
Large End	Small End	Length (Inches)	T	S	Safe Working Load (lbs)
3/4"	1/2"	34, 43, 52	10"	2"	7,500
1"	3/4"	30, 36, 42, 48, 54, 60	10"	6"	18,000
1-1/4"	1"	30, 36, 42, 48, 54, 60	10"	6"	34,000
1-1/2"	1-1/4"	30, 36, 42, 48, 54, 60	10"	6"	50,000

Safe working load is based on an approximate 2:1 safety factor.



To Order, Specify: quantity, type, diameter at each end, and length.

Medium and Heavy Forming Products

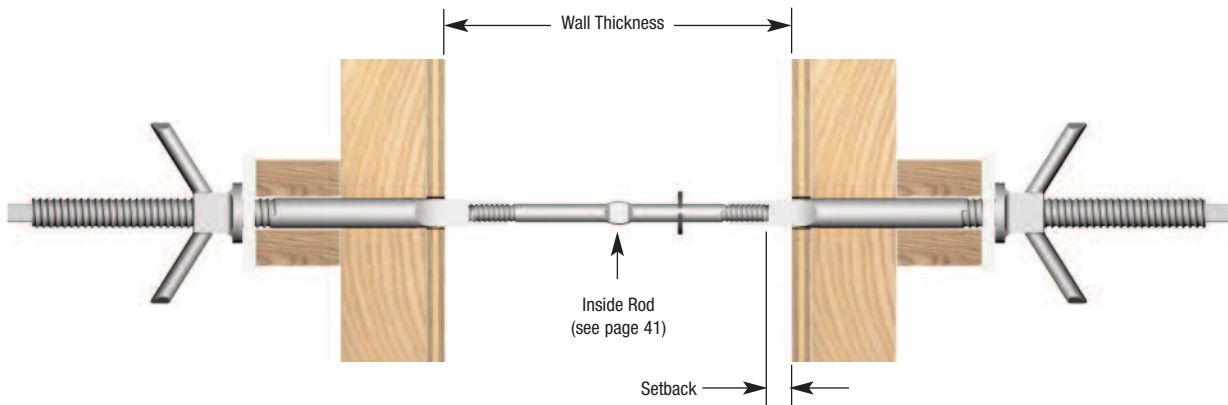
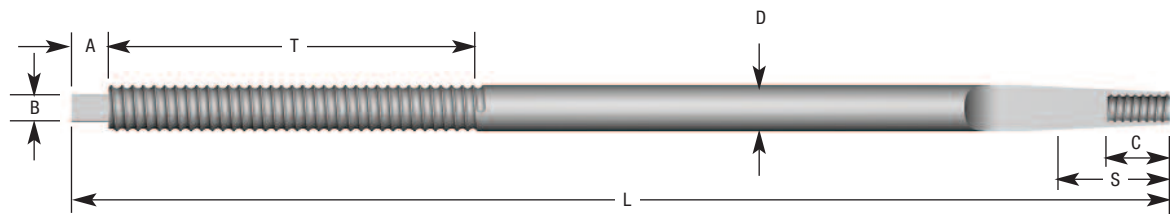
(2030) HD-20 SHE BOLT

The HD-20 She Bolt is a heavy-duty, reusable form tie system furnished with external coil threads at one end and internal coil threads at the other. Several inside rods are available for use with the She Bolt to tie formwork. They can also be effectively used with various form anchors to support cantilevered forms. Like the Taper Tie, the She Bolt is furnished with a square end for wrench turning capability. Removal is enhanced by greasing the embedded portion of the she bolt.

HD-20 SHE BOLT DATA								
Outside Dia.	Inside Rod Dia.	A	B	C	S	T	Standard Lengths (L)	Safe Working Load (lbs)
3/4"	1/2"	1"	1/2"	1-1/2"	2-3/4"	10"	20", 24"	9,000
1"	5/8"	1"	1/2"	1-1/2"	2-3/4"	10"	20", 24"	12,000
1-1/4"	3/4"	1"	3/4"	2"	4"	10"	20", 24"	18,000
1-1/2"	1"	1"	3/4"	2"	4"	10"	20", 24"	37,500

Safe working load is based on an approximate 2:1 safety factor.

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To Order, Specify: quantity, type, outside diameter, inside rod diameter, and length.

MeadowBurke

Medium and Heavy Forming Products

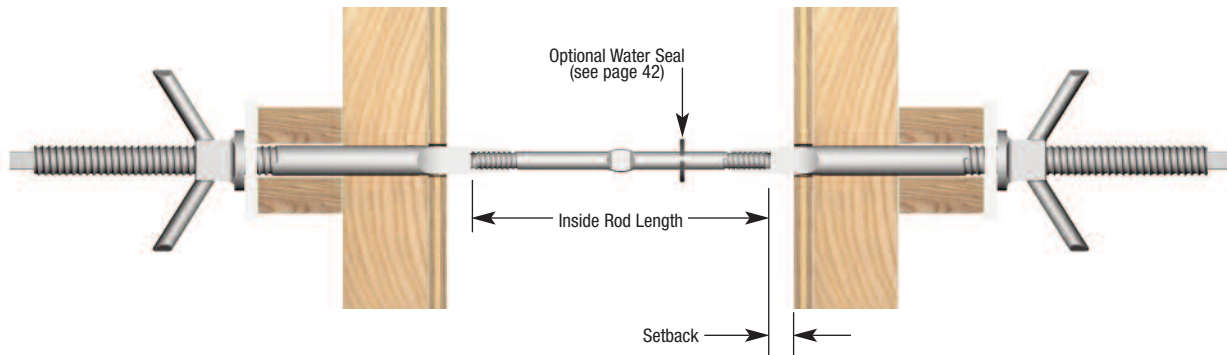
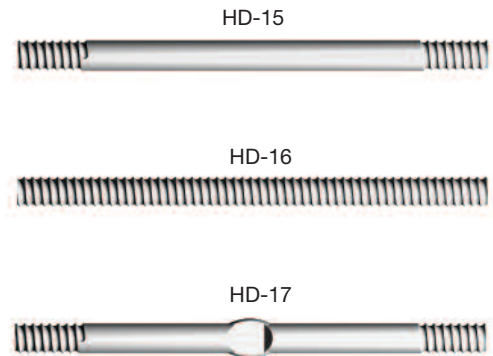
- (2035) HD-15 INSIDE ROD - PLAIN
- (2036) HD-16 INSIDE ROD - CONTINUOUS
- (2037) HD-17 INSIDE ROD - WITH FLAT

The HD-15, HD-16 and HD-17 Inside Rods are fabricated from high strength steel are available in three styles for use with She Bolts. All versions have coil threads and are available in 1/2", 5/8", 3/4" and 1" diameters.

The HD-15 Plain Inside Rod is a smooth bar threaded on both ends.

The HD-16 Continuous Inside Rod has coil threads the total length of the bar. It can be purchased cut to desired length or in 10' lengths and cut to size in the field when unusual forming situations arise.

The HD-17 Inside Rod With Flat is similar to the plain version with a flat or crimp to prevent it turning in the concrete during the She Bolt removal process.



HD-15, HD-16 & HD-17 INSIDE ROD DATA			
Inside Rod Configuration	Diameter	Thread Length	Safe Work Load (lbs)
Inside Rod - Plain HD-15	1/2"	1-1/4"	9,000
	5/8"	1-1/2"	12,000
	3/4"	1-3/4"	18,000
	1"	2-1/4"	36,000
Inside Rod - Continuous HD-16	1/2"		9,000
	5/8"	As Required	12,000
	3/4"		18,000
	1"		36,000
Inside Rod - With Flat HD-17	1/2"	1-1/4"	9,000
	5/8"	1-1/2"	12,000
	3/4"	1-3/4"	18,000
	1"	2-1/4"	36,000

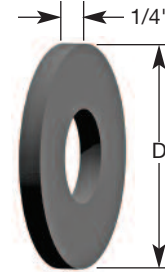
Safe working load is based on an approximate 2:1 safety factor.

To Order, Specify: quantity, type, diameter, thread length and rod length.

Medium and Heavy Forming Products

(2040) HD-19 WATERSTOP WASHER – INSIDE ROD

A HD-19 Waterstop Washer made from neoprene rubber is available for field installation on the She Bolt Inner Rods. The neoprene washers help prevent the seepage of water along the rod. In damp or wet conditions this is a beneficial addition to the She Bolt system.



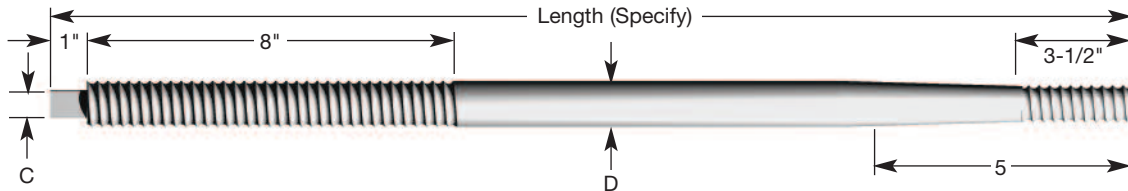
To Order, Specify: quantity, type and diameter.

(2050) HD-40 HE BOLT

The HD-40 He Bolt is fabricated similar to the She Bolt but has external coil threads at both ends. It is used primarily in conjunction with a previously cast in place form anchor to reanchor cantilever forms. He Bolts are available in two sizes, 1-1/4" x 1" and 1-1/2" x 1-1/4" and are furnished with a square wrench end to aid in the removal process. They will accommodate pour rates up to 10' and are reusable, subject to thread wear.



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HD-40 HE BOLT DATA				
Large Diameter	Small Diameter	"C" Dimension	Tension Safe Work Load (lbs)	Shear Safe Work Load (lbs)
1-1/4"	1"	3/4"	34,000	22,500
1-1/2"	1-1/4"	1"	50,000	33,500

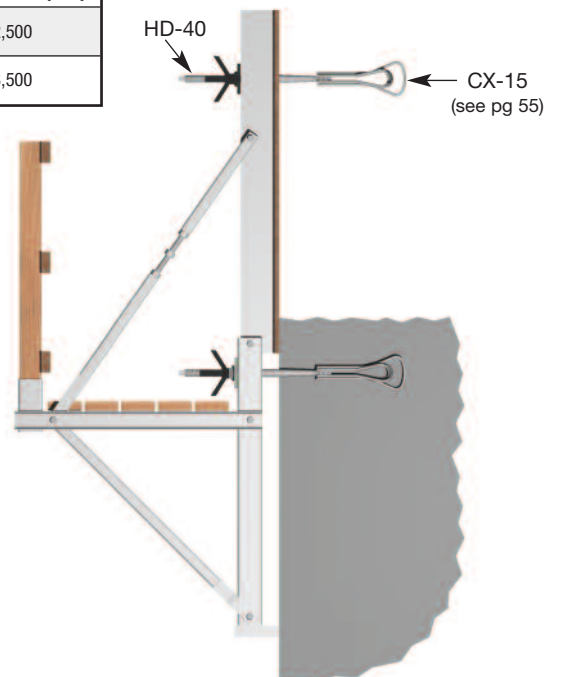
Safe working load is based on an approximate 2:1 safety factor.

NOTE: If setting-pin hole is required, it must be specified when ordering.

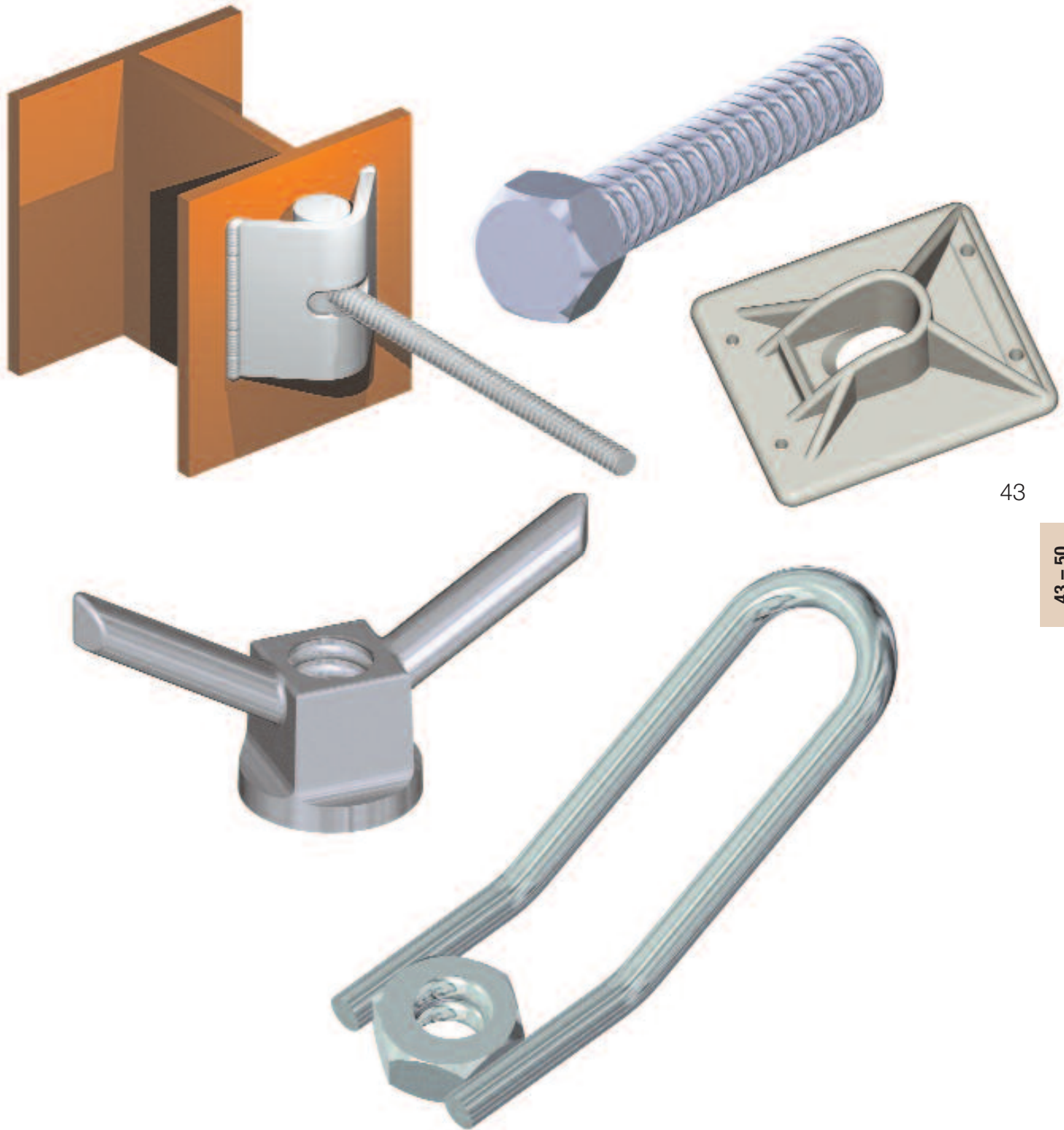
To Order, Specify: quantity, type, diameter and length.

TYPICAL CANTILEVER FORM UTILIZING THE HE BOLT SYSTEM

Several coil loop anchors are available for use with the He Bolt. Meadow Burke recommends using only four-strut anchors for reanchoring to previous pours when lifts over five (5) feet are encountered. See page 52 & 55 for additional detail.



Form Tie Accessories and Working Parts



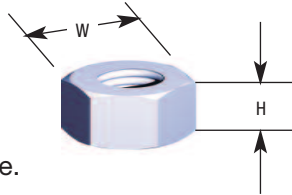
43

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Form Tie Accessories and Working Parts

(2060) CN-5 COIL NUT – STANDARD

The CN-5 Standard Coil Nut is manufactured from hex stock and is available in 1/2" through 1-1/2" diameters. Dimensions are displayed in the Table.



CN-5 COIL NUT - STANDARD DATA			
Diameter	Flat Width (W)	Height (H)	Safe Work Load (lbs)
1/2"	7/8"	1/2"	4,500
3/4"	1-1/8"	5/8"	9,000
3/4"	1-1/4"	3/4"	9,000
1"	1-5/8"	1"	18,000
1-1/4"	2"	1-1/4"	27,000
1-1/2"	2-3/8"	1-1/2"	40,000

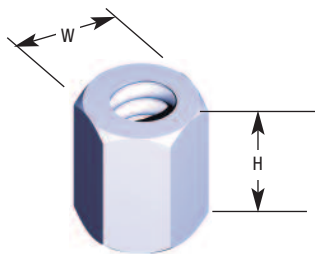
Safe working load is based on an approximate 2:1 safety factor.

Note: In order to achieve the published safe working loads of Coil Bolts, Coil Rods, etc. when using the Standard Coil Nut; two (2) Standard Coil Nuts tightly locked together are required.

To Order, Specify: quantity, type and diameter.

(2062) CN-25 COIL NUT – HEAVY

The CN-25 Heavy Coil Nuts are manufactured from hex stock like the Standard Coil Nut but is of sufficient length to develop the safe working loads required for medium and heavy form tying systems.



CN-25 COIL NUT - HEAVY DATA			
Diameter	Flat Width (W)	Height (H)	Safe Work Load (lbs)
1/2"	7/8"	1"	9,000
3/4"	1-1/8"	1-1/2"	18,000
1"	1-5/8"	2"	38,000
1-1/4"	2"	2-1/2"	56,000
1-1/2"	2-3/8"	3"	68,000

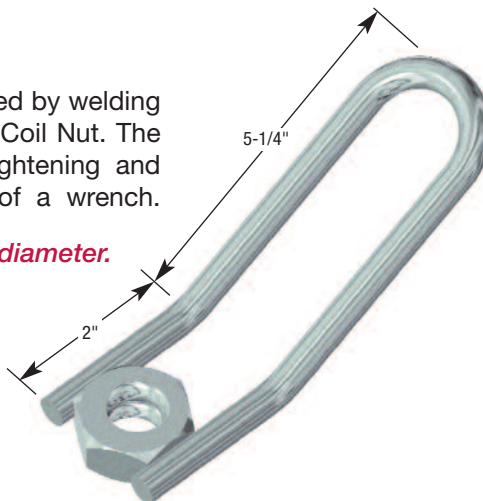
Safe working load is based on an approximate 2:1 safety factor.

To Order, Specify: quantity, type and diameter.

(2065) CN-27 HANDLE COIL NUT

The CN-27 Handle Coil Nut is fabricated by welding a substantial wire loop to a Standard Coil Nut. The unit is designed to provide quick tightening and release functions without the need of a wrench.

To Order, Specify: quantity, type and diameter.

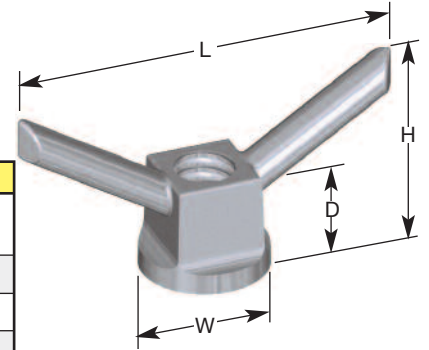


CN-27 HANDLE COIL NUT DATA	
Coil Rod Diameter	Safe Work Load (lbs)
1/2"	4,500
3/4"	9,000
1"	18,000
1-1/4"	27,000

Safe working load is based on an approximate 2:1 safety factor.

(2070) CN-29 COIL WING NUT

The CN-29 Coil Wing Nuts are furnished with coil thread and are available in 1/2" through 1-1/2" diameters. The ductile iron Coil Wing Nut offers high strength, speedy tightening and release.



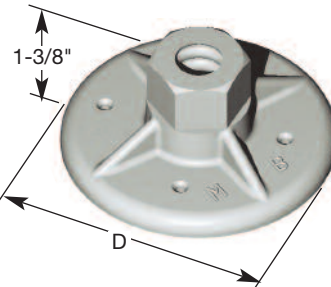
CN-29 COIL WING NUT DATA					
Diameter	L	D	H	W	Safe Work Load (lbs)
1/2"	5"	1-1/4"	2-3/8"	1-3/8"	9,000
3/4"	5-7/8"	1-1/4"	2-1/2"	1-3/4"	18,000
7/8"	6"	1-5/8"	2-3/4"	1-3/4"	18,000
1"	6"	1-5/8"	3"	2"	38,000
1-1/4"	6-5/8"	1-5/8"	2-3/4"	2-1/4"	52,000
1-1/2"	6-3/4"	1-7/8"	2-3/4"	2-7/8"	80,000

Safe working load is based on an approximate 2:1 safety factor.

To Order, Specify: quantity, type and diameter.

(2075) HD-27 COIL NUT WASHER

The HD-27 Coil Nut Washer is a one-piece ductile iron unit that features both nut and washer. Coil Nut Washers are available in 1/2", 3/4" and 1" coil thread diameters and can be used with any coil thread product with compatible diameter.



HD-27 COIL NUT WASHER DATA		
Thread Diameter	D	Safe Work Load (lbs)
1/2"	3-3/4"	4,500
3/4"	3-3/4"	9,000
1"	5"	18,000

Safe working load is based on an approximate 2:1 safety factor.

To Order, Specify: quantity, type and diameter.

(2080) CW-4 FLAT WASHER

The CW-4 Flat Washers are manufactured from high carbon flat steel plate and are designed to provide the required bearing against the form members. Flat Washers are available in many sizes in both standard and heavy versions. Refer to the Table for dimensions and safe working loads.

CW-4 FLAT WASHER DATA					
Standard Washer			Heavy Washer		
Bolt Dia.	SWL (lbs)	Size	Bolt Dia.	SWL (lbs)	Size
1/2"	4,500	1/4 x 3 x 4	1/2"	6,750	1/4 x 4 x 5
3/4"	6,750	1/4 x 4 x 5	3/4"	9,000	1/2 x 5 x 5
1"	18,000	1/2 x 5 x 5	1"	37,500	3/4 x 7 x 7
1-1/4"	27,000	1/2 x 5 x 5	1-1/4"	37,500	3/4 x 7 x 7
1-1/2"	37,500	3/4 x 5 x 5	1-1/2"	37,500	3/4 x 7 x 7

Safe working load is based on an approximate 2:1 safety factor.

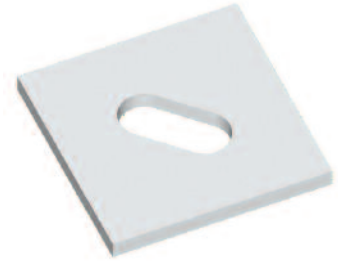
To Order, Specify: quantity, type, standard or heavy and bolt diameter.



Form Tie Accessories and Working Parts

(2082) CW-4 FLAT WASHER – SLOTTED

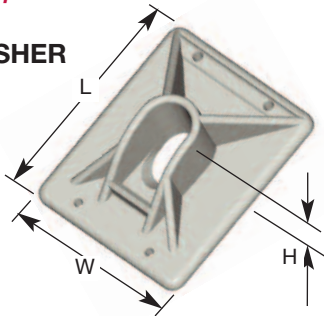
The CW-4 Slotted Flat Washer is similar to the regular Flat Washer, but has a slotted hole that aids in bolting up misaligned form ties. Slotted Flat Washers are available for use with 1/2", 5/8" and 3/4" bolt diameters and all have the same 1/4" x 3" x 3" dimensions.



To Order, Specify: quantity, type and bolt diameter.

(2085) HD-22 BATTER WASHER

The HD-22 Batter Washers are ductile iron washers that allow form ties to be used at any angle up to 45°. Nail holes are provided to permit the washer to be nailed to the formwork. Lumber grips on the bottom of the washer help prevent slippage when not nailed.



HD-22 BATTER WASHER - DATA			
Bolt Diameter	L	W	H
1/2"	4"	3-1/2"	1"
3/4"	5"	4"	1-1/2"
1"	5-1/2"	6"	1-3/4"
1-1/4"	6"	7"	2"
1-1/2"	6-1/2"	7-1/2"	2"

To Order, Specify: quantity, type and bolt diameter.

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(2090) CB-2 COIL BOLT

The CB-2 Coil Bolts are available in 1/2" through 1-1/2" diameters for use with Coil Ties, Coil Inserts and other Meadow Burke products furnished with coil threads. Coil Bolts are manufactured with the fast-threading, self-cleaning coil thread and are available in lengths as needed.



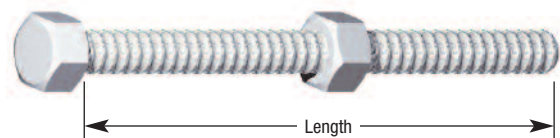
Coil Bolts may be furnished with an integral forged head or with a hex nut welded to a length of continuous coil rod. Standard thread length of the integral forged head Coil Bolt is 4" on the 1/2" diameter and 4-1/2" on all other sizes. For minimum coil penetration, see page 45.

To Order, Specify: quantity, type and bolt diameter.

Use of waterproof, stain resistant grease applied to the bolt shaft will aid in the bolt removal process. Note that Coil Bolts are subject to wear and misuse and should be continually inspected for wear, cracks, bends, overstressing, etc. If there is any indication of these types of problems, the bolt should be discarded.

(2092) CB-4 ADJUSTABLE COIL BOLT

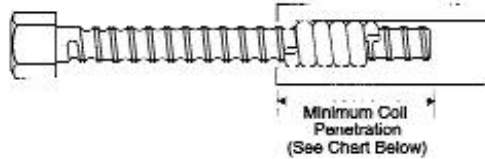
The CB-4 Adjustable Coil Bolt consists of a length of Coil Rod with a Coil Nut welded on one end and a free running Coil Nut on the threaded section. This unit simplifies ordering on projects where unusual forming conditions require numerous bolt lengths. The Adjustable Coil Bolt is available in 1/2" and 3/4" diameters in standard 18" and 24" lengths. Other diameters and lengths are available on special order. For minimum coil penetration, see page 47.



To Order, Specify: quantity, type, bolt diameter and length.

COIL BOLT (CONT.)

MINIMUM COIL PENETRATION



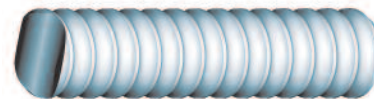
CB-2 & CB-4 COIL BOLT PENETRATION DATA									
1/2" Diameter Over 6"		3/4" Diameter		1" Diameter		1-1/4" Diameter		1-1/2" Diameter	
Tension	Shear	Tension	Shear	Tension	Shear	Tension	Shear	Tension	Shear
9,000	6,000	18,000	12,000	38,000	25,000	56,000	40,000	68,000	45,000
Minimum Coil Penetration 2"		Minimum Coil Penetration 2-1/2"		Minimum Coil Penetration 2-1/2"		Minimum Coil Penetration 3"		Minimum Coil Penetration 3"	
Treads per inch 6		Treads per inch 4-1/2		Treads per inch 3-1/2		Treads per inch 3-1/2		Treads per inch 3-1/2	
Min. Root Area Square Inches .1385		Min. Root Area Square Inches .3080		Min. Root Area Square Inches .5410		Min. Root Area Square Inches .9160		Min. Root Area Square Inches 1.3890	

Safe working load is based on an approximate 2:1 safety factor.

WARNING: Minimum coil penetration is extremely important and must be adhered to when threading Coil Bolts into other coil-threaded products. Safe working loads are dependent on maintaining the appropriate minimum coil penetration; failure to do so can lead to a premature failure of the coil and compromise worker safety. Refer to the Table for safe working loads and minimum coil penetration lengths.

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- (2100) CR-3 COIL ROD - STANDARD
- (2102) CR-4 COIL ROD - HI-STRENGTH



The CR-3 and CR-4 Coil Rods are manufactured from quality high-grade steel with a full-length coil thread. It is available in 1/2" to 1-1/2" diameters cut to length or in 10' or 12' lengths for field cutting. CR-3 Standard Coil Rod comes in 10' lengths and CR-4 Hi-Strength Coil Rod is furnished in 12' lengths. Longer lengths are available on special order. Coil Rod can be used with numerous other coil-threaded products to fashion an adjustable tie, an emergency tie, embedded as an adjustable anchorage, etc.

CR-3 & CR-4 COIL ROD DATA		
Coil Rod Diameter	CR-3 Safe Work Loads (lbs)	CR-4 Safe Work Load (lbs)
1/2"	---	9,000
3/4"	12,000	18,000
1"	24,000	38,000
1-1/4"	36,000	56,000
1-1/2"	54,000	68,000

Safe working load is based on an approximate 2:1 safety factor.

Note: 1/2" and 5/8" dia. is available only as CR-4 Hi-Strength Coil Rod. Coil Rod requires two Standard Coil Nuts or one Heavy Coil Nut to develop the safe working loads shown. Minimum coil penetration applies; see coil penetration warning above.

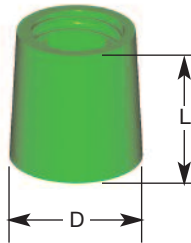
To Order, Specify: quantity, type, bolt diameter and length.

Form Tie Accessories and Working Parts

(2110) CC-6 CONE-FAST CONES

The CC-6 Cone-Fast Cones are designed with internal coil threads to engage the protruding coils of the Cone-Fast Coil Tie and provide a positive form spreader action.

Cone-Fast Cones are stocked in all Cone-Fast Coil Tie diameters. Reference the Table for cone dimensions and setback.



CC-6 CONE-FAST CONES DATA			
Bolt Diameter	Setback	L	D
1/2"	1"	1-3/8"	1-1/4"
1/2"	1-1/2"	1-7/8"	1-1/4"
1/2"	2"	2-3/8"	1-1/4"
3/4"	1"	2-1/2"	1-3/4"
3/4"	2"	2-1/2"	1-3/4"
1"	2"	2-1/2"	2-1/8"
1-1/4"	2"	2-1/2"	2-3/8"

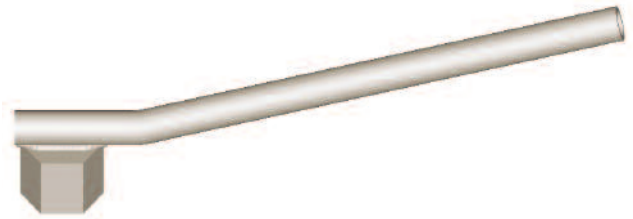
To Order, Specify: quantity, type, bolt diameter and setback.

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(2115) CW-7 CONE WRENCH

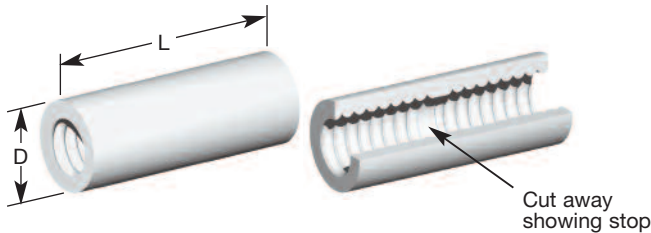
The CW-7 Cone Wrench is available in sizes corresponding to the Cone-Fast Cones (above) to facilitate the removal of the cones from the concrete.

To Order, Specify: quantity, type and bolt diameter.



(2125) HD-32 STOP COUPLER

The HD-32 Stop Coupler has coil threads tapped from each end creating a stop in the middle. Coil Rods or Inside Rods must be threaded to the internal stop in order to achieve the listed safe working loads.



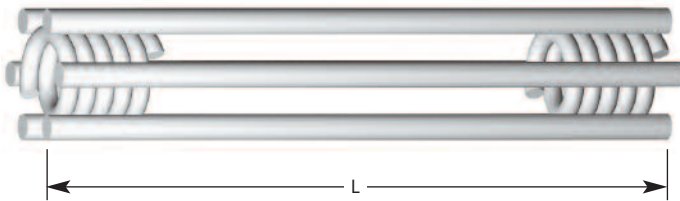
To Order, Specify: quantity, type and thread diameter.

HD-32 STOP COUPLER DATA			
Thread Diameter	D	L	Safe Work Load (lbs)
1/2"	3/4"	2-1/2"	9,000
3/4"	1-1/16"	3"	18,000
1"	1-1/2"	4-1/2"	38,000

Safe working loads are based on an approximate 2:1 safety factor.

(2130) CT-4 COIL ROD COUPLER

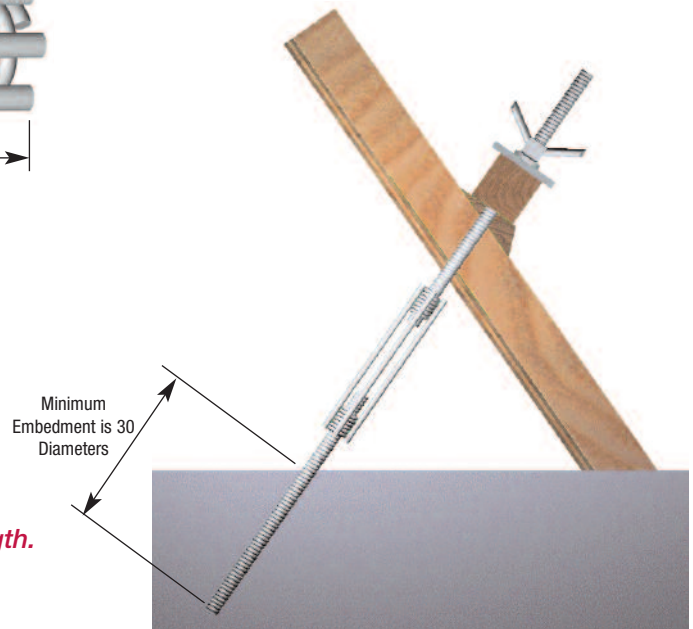
The CT-4 Coil Rod Coupler is a special four or six strut coil tie used in conjunction with Coil Rod to satisfy unusual forming conditions or variations. It is available in 1/2", 3/4" and 1" diameters in the lengths shown in the Table.



CT-4 COIL ROD COUPLER DATA			
Diameter	Struts	Length (L)	Safe Work Load (lbs)
1/2"	4	8"	9,000
3/4"	4	8"	18,000
1"	6	10"	38,000

Safe working load is based on an approximate 2:1 safety factor.

To Order, Specify: quantity, type, diameter, and length.



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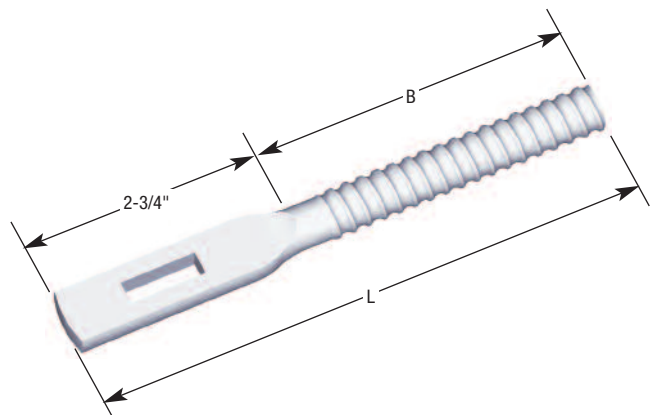
(2150) CT-20 PLYLAG

The CT-20 Plylag is designed to firmly attach walers and/or strongbacks to modular forms or to provide an attachment method for coil threaded products. The Plylag is available in 1/2" diameter.

CT-20 PLYLAG DATA			
Diameter	Length (L)	B	Safe Work Load (lbs)
1/2"	6-1/4"	3-1/2"	3,000
1/2"	6-3/4"	4"	3,000
1/2"	9-3/4"	7"	3,000
1/2"	14-3/4"	12"	3,000

Safe working load is based on an approximate 2:1 safety factor.

To Order, Specify: quantity, type and length.



Form Tie Accessories and Working Parts

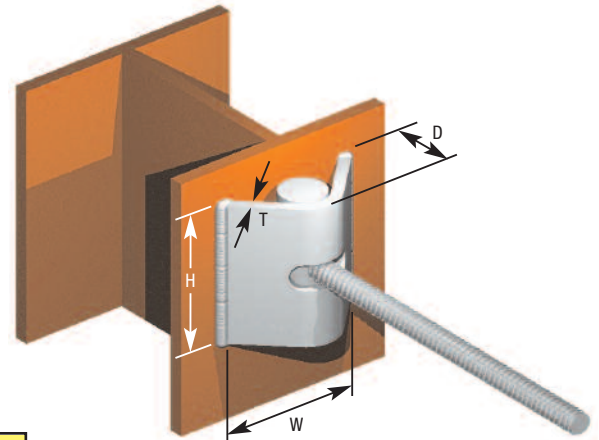
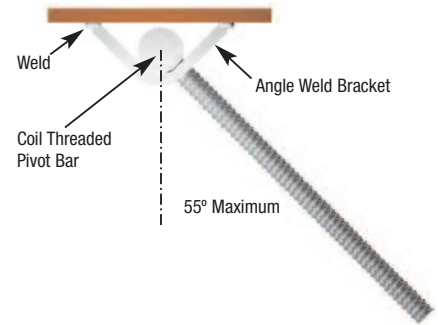
(2140) HD-24 ANGLE WELD BRACKET

The HD-24 Angle Weld Bracket is designed to provide adjustability for one-sided forming applications. The bracket is available in 1/2", 3/4" and 1" thread diameters and allows for 110° of maximum swing. The bracket can be welded to any steel construction member using proper welding techniques. The safe loads displayed in the Table are approximate and are dependent on the quality of the weld.

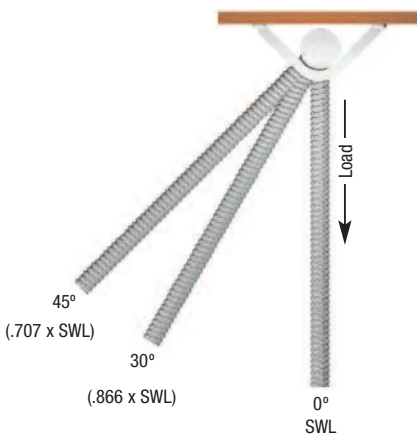
HD-24 ANGLE WELD BRACKET DATA					
Thread Diameter	W	H	T	D	Safe Work Load (lbs)
1/2"	5"	3-1/4"	1/4"	2-3/4"	9,000
3/4"	5"	4-1/2"	1/4"	2-3/4"	18,000
1"	5"	6"	1/2"	3"	32,000

Safe working load is based on an approximate 2:1 safety factor.

To Order, Specify: quantity, type and thread diameter.



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HD-24 LOAD REDUCTION	
Angle	Factor
0°	1.000
15°	0.966
30°	0.866
45°	0.707
55°	0.500

Note: Load reduction factors due to angular loads on the Angle Weld Bracket can be figured as follows:

- 1) Select the appropriate angle.
- 2) Locate the corresponding load reduction factor in the Table.
- 3) Multiply the safe working load by the reduction factor.

Form Anchorage

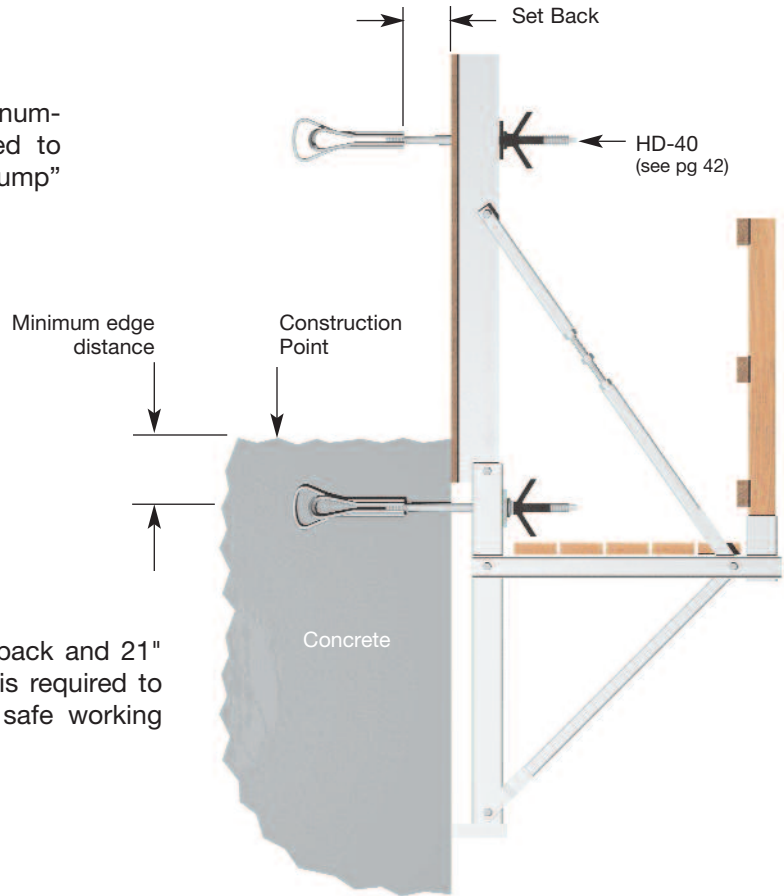
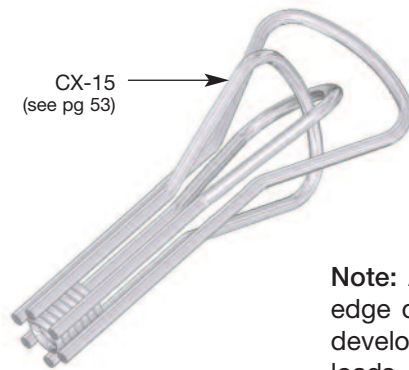


Form Anchorage

Typical Cantilever Form

Meadow Burke manufactures and supplies a number of quality coil thread anchors designed to securely attach and support cantilever or "jump" type formwork.

Typical cantilever form anchorage application

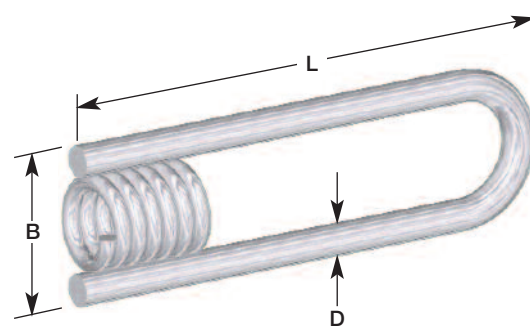


Note: A 6" setback and 21" edge distance is required to develop listed safe working loads.

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(2170) CX-2 COIL LOOP INSERT - STRAIGHT

The CX-2 Straight Coil Loop Insert is fabricated with one straight loop strut resistance welded to a coil. It is available in diameters from 1/2" through 1-1/4" and in the standard lengths and safe working loads shown in the Table. Other lengths and equipped with Cone-Fast Cones are available on special order. Minimum spacing of inserts shall be double the minimum edge distance.



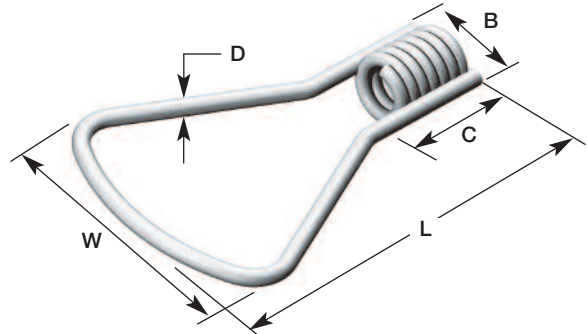
To Order, Specify: quantity, type, safe working load, bolt diameter and length.

CX-2 COIL LOOP INSERT - STRAIGHT DATA					
Bolt Dia.	Length (L)	Wire Dia. (D)	B	Safe Work Load (lbs)	Minimum Edge Dist.
1/2"	4"	0.225"	1-1/8"	4,500	7"
1/2"	6"	0.306"	1-1/4"	7,200	10"
3/4"	4"	0.306"	1-5/8"	7,500	7"
3/4"	6"	0.375"	1-3/4"	9,000	10"
1"	6"	0.375"	2-1/8"	9,000	10"
1"	8"	0.375"	2-1/8"	9,000	13"
1-1/4"	8"	0.440"	2-1/2"	12,000	13"

Safe working load is based on an approximate 2:1 safety factor.
Minimum coil penetration warning on Page 47 applies.

(2172) CX-4 COIL LOOP INSERT - FLARED

The CX-4 Flared Coil Loop Insert is manufactured with a flared loop strut resistance welded to a coil. It is available in diameters from 3/4" through 1-1/2" and in the lengths and safe working loads shown for lifts up to 5'. Minimum spacing of inserts shall be double the minimum edge distance.



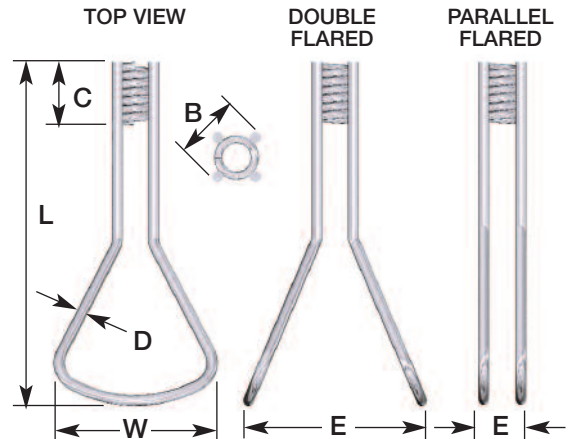
CX-4 COIL LOOP INSERTS - FLARED DATA								
Bolt Diameter	Insert Lgth (L)	Safe Work Load (Tension) (lbs)	Concrete Strength PSI	B	Coil Length (C)	Wire Diameter (D)	Flare Spread (W)	Minimum Edge Distance
3/4"	6"	9,000	2,000	1-3/4"	1-3/4"	.375"	3-1/2"	13"
3/4"	9"	9,000	2,000	1-3/4"	1-3/4"	.375"	5-1/2"	13"
1"	9"	9,000	2,000	2-1/8"	2-1/16"	.375"	5-1/2"	15"
1"	9"	13,500	2,000	2-1/2"	2-1/16"	.440"	5-3/4"	15"
1"	12"	9,000	2,000	2-1/8"	2-1/16"	.375"	5-1/2"	15"
1"	12"	13,500	2,000	2-1/2"	2-1/16"	.440"	5-3/4"	15"
1-1/4"	12"	9,000	2,000	2-1/2"	2-5/16"	.375"	5-3/4"	15"
1-1/4"	12"	15,000	2,000	2-1/2"	2-5/16"	.440"	5-3/4"	15"
1-1/2"	12"	15,000	2,000	2-3/4"	2-9/16"	.440"	5-3/4"	15"

Safe working load is based on an approximate 2:1 safety factor. SWL based on 1/2" set-back from concrete surface. Minimum coil penetration warning on Page 47 applies.

To Order, Specify: quantity, type, safe working load, bolt diameter and length.

(2174) CX-6 COIL LOOP INSERT - DOUBLE FLARED

The CX-6 Double Flared Coil Loop Insert has two flared loop struts resistance welded to the coil. It is available in the diameters, lengths and safe working loads displayed in the Table. This insert is well suited for low strength concrete applications and can easily accommodate 5' to 7-1/2' lifts. This insert can be ordered with straight loops. Minimum spacing of inserts shall be double the minimum edge distance.



CX-6 COIL LOOP INSERTS - DOUBLE FLARED DATA										
Flare Type	Bolt Diameter	Insert Length (L)	Safe Work Load (Tension) (lbs)	Concrete Strength PSI	B	Coil Length (C)	Wire Diameter (D)	Flare Spread (W)	Minimum Edge Distance	E
Parallel	1"	12"	18,000	2,000	2-1/8"	2-1/16"	.375"	5-1/2"	15"	1-1/4"
Parallel	1"	12"	27,000	2,000	2-1/2"	2-1/16"	.440"	5-3/4"	15"	
Parallel	1-1/4"	12"	18,000	2,000	2-1/2"	2-5/16"	.375"	5-3/4"	15"	1-1/2"
Parallel	1-1/4"	12"	32,000	2,000	2-1/2"	2-5/16"	.440"	5-3/4"	15"	
Double	1"	12"	18,000	2,000	2-1/8"	2-1/16"	.375"	5-1/2"	15"	5-3/4"
Double	1"	12"	27,000	2,000	2-1/2"	2-1/16"	.440"	5-3/4"	15"	
Double	1-1/4"	12"	18,000	2,000	2-1/2"	2-5/16"	.375"	5-3/4"	15"	
Double	1-1/4"	12"	32,000	2,000	2-1/2"	2-5/16"	.440"	5-3/4"	15"	
Double	1-1/2"	12"	18,000	2,000	2-3/4"	2-9/16"	.375"	5-3/4"	15"	
Double	1-1/2"	12"	32,000	2,000	2-3/4"	2-9/16"	.440"	5-3/4"	15"	

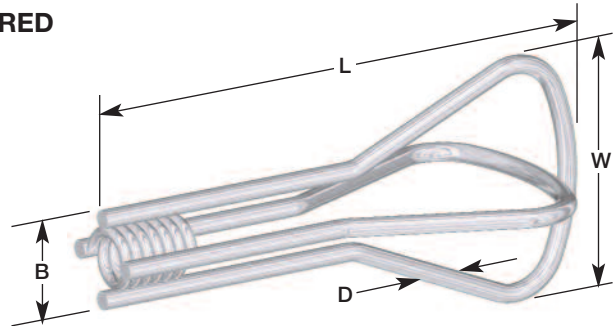
Safe working load is based on an approximate 2:1 safety factor, on SWL based on 1/2" set-back from concrete surface. Minimum coil penetration warning on Page 47 applies.

To Order, Specify: quantity, type, safe working load, bolt diameter and length.

Form Anchorage

(2176) CX-8 COIL LOOP INSERT – CRISS CROSS FLARED

The CX-8 Criss Cross Flared Coil Loop Insert is similar to the double flared insert but has the strut wires welded in a criss cross pattern. It is available in 1", 1-1/4" and 1-1/2" diameters and in the lengths and safe working loads shown in the Table. This insert is applicable for 5' to 7-1/2' lifts. Minimum spacing of inserts shall be double the minimum edge distance.



CX-8 CRISS-CROSS INSERT - FLARED DATA							
Bolt Diameter	Insert Length (L)	Safe Work Load (Tension) (lbs)	B	Coil Length (C)	Wire Diameter (D)	W	Minimum Edge Distance
1"	12-3/8"	19,000	2-1/16"	2-1/16"	.375"	5-1/2"	15"
1"	12-1/2"	27,000	2-1/4"	2-1/16"	.440"	5-3/4"	15"
1-1/4"	12-3/8"	19,000	2-5/16"	2-1/16"	.375"	5-3/4"	15"
1-1/4"	12-1/2"	27,000	2-1/2"	2-1/16"	.440"	5-3/4"	15"
1-1/2"	12-3/8"	19,000	2-9/16"	2-3/8"	.375"	5-3/4"	15"
1-1/2"	12-1/2"	27,000	2-3/4"	2-3/8"	.440"	5-3/4"	15"

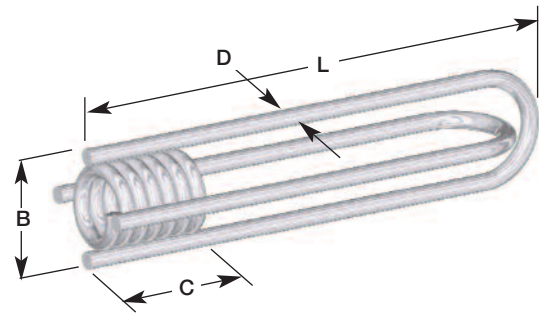
Safe working load is based on an approximate 2:1 safety factor and 3000 psi concrete. Minimum coil penetration warning on Page 47 applies.

To Order, Specify: quantity, type, safe working load, bolt diameter and length.

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(2178) CX-9 COIL LOOP INSERT– CRISS CROSS STRAIGHT

The CX-9 Straight Criss Cross Coil Loop Insert is available in 3/4" to 1-1/4" diameters in the lengths and safe working loads shown in the Table. This insert is constructed very much like the flared version but has two straight loops and is well suited for thin wall applications. Minimum spacing of inserts shall be double the minimum edge distance.



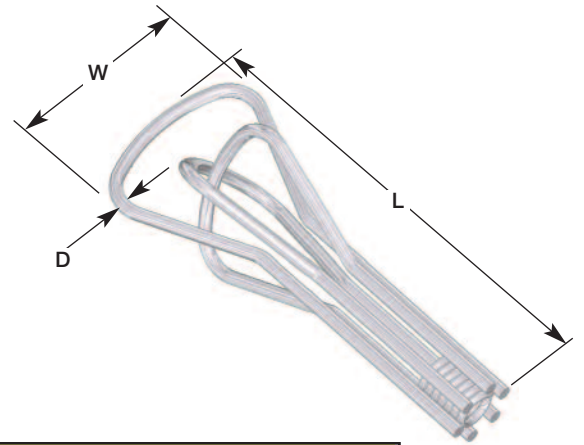
CX-9 COIL LOOP INSERT - CROSS COIL STRAIGHT DATA						
Bolt Diameter	Insert Length (L)	Safe Work Load (Tension) (lbs)	B	Coil Length (C)	Wire Diameter (D)	Minimum Edge Distance
3/4"	9"	13,500	1-3/4"	1-5/8"	.306"	24"
3/4"	12"	13,500	1-3/4"	1-5/8"	.306"	24"
1"	9"	13,500	2"	2-1/16"	.306"	24"
1"	12"	13,500	2"	2-1/16"	.306"	24"
1"	9"	18,000	2-1/8"	2-1/16"	.375"	24"
1"	12"	18,000	2-1/8"	2-1/16"	.375"	24"
1-1/4"	9"	27,000	2-1/2"	2-1/16"	.440"	24"
1-1/4"	12"	27,000	2-1/2"	2-1/16"	.440"	24"

Safe working load is based on an approximate 2:1 safety factor and 3000 psi concrete. SWL based on 1/2" set-back from concrete surface. Minimum coil penetration warning on Page 47 applies.

To Order, Specify: quantity, type, safe working load, bolt diameter and length.

(2180) CX-15 COIL LOOP INSERT - CRISS CROSS HEAVY

The CX-15 Criss Cross Heavy Coil Loop Inserts has three flared loop struts welded to the coil for greater load distribution and shear capacity. It is available in 1-1/4" bolt diameter x 15" long. Commonly used with HD-40 on page 42. Minimum spacing of inserts shall be double the minimum edge distance.



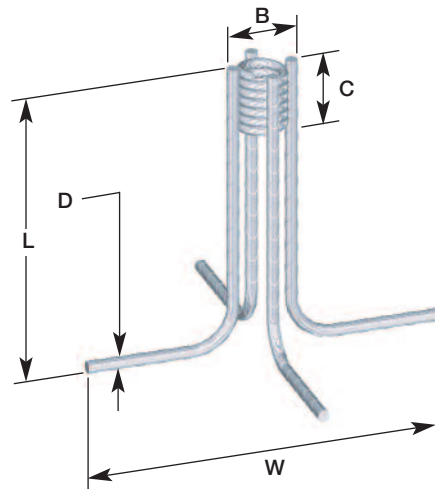
CX-15 COIL LOOP INSERT - CRISS CROSS HEAVY						
Bolt Diameter	Length (L)	Number of Struts	Safe Work Load (lbs)	Wire Diameter (D)	Flare Width (W)	Minimum Edge Distance
1-1/4"	15"	6	48,000	0.440	6	21"

Safe working load is based on an approximate 2:1 safety factor and 1000 psi concrete. SWL based on 6" set-back from concrete surface. Minimum coil penetration warning on Page 47 applies.

To Order, Specify: quantity, type, safe working load, bolt diameter and length.

(2185) CX-24 THIN SLAB INSERT

The CX-24 Thin Slab Insert is a four-strut insert fabricated from deformed wire for increased pullout strength. It is available in 3/4", 1", 1-1/4" and 1-1/2" diameters. The limited height of the insert makes it effective in thin concrete applications. Minimum spacing of inserts shall be double the minimum edge distance.



CX-24 COIL LOOP INSERT - DOUBLE FLARED							
Bolt Diameter	Insert Length (L)	Safe Work Load (lbs)	B	Coil Length (C)	Wire Diameter (D)	Flare Width (W)	Minimum Edge Distance
3/4"	3"	5,000	1-5/8"	1-3/4"	.306"	7-1/8"	9"
1"	4"	7,000	1-7/8"	2-1/16"	.306"	9-1/2"	12"
1-1/4"	4"	8,000	2-1/4"	2-1/16"	.375"	9-3/4"	12"
1-1/2"	4"	8,000	2-1/2"	2-1/16"	.375"	10"	12"

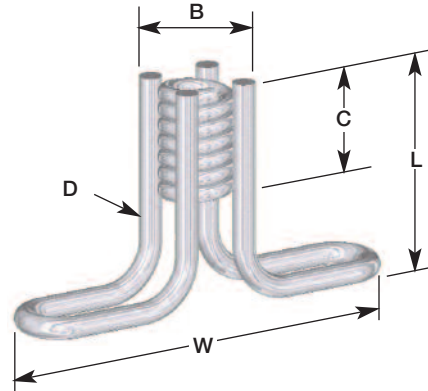
Safe working load is based on an approximate 2:1 safety factor and 3000 psi concrete. SWL based on 1/2" set-back from concrete surface. Minimum coil penetration warning on Page 47 applies.

To Order, Specify: quantity, type, safe working load, bolt diameter and length.

Form Anchorage

(2190) CX-28 COIL WINGNUT INSERT

The CX-28 Coil Wingnut Insert is designed for use in thin slabs or small sections to attach secondary items or they can be used as nut on a length of Coil Rod in forming applications. Refer to the chart for diameters, dimensions and safe working loads. Minimum spacing of inserts shall be double the minimum edge distance.



CX-28 COIL WINGNUT INSERT DATA							
Bolt Diameter	Insert Length (L)	Width (W)	Safe Work Load (Tension) (lbs)	B	Coil Length (C)	Wire Diameter (D)	Minimum Edge Distance
1/2"	2-1/4"	4-1/8"	1,900	1-1/4"	1-1/8"	.225"	4"
3/4"	2-1/4"	5"	4,000	1-5/8"	1-5/8"	.262"	5"
3/4"	3-1/2"	6"	6,800	1-3/4"	2"	.306"	6"
1"	2-1/2"	6"	4,000	2"	2"	.306"	5"
1"	4-1/2"	6"	9,500	2"	2"	.306"	8"

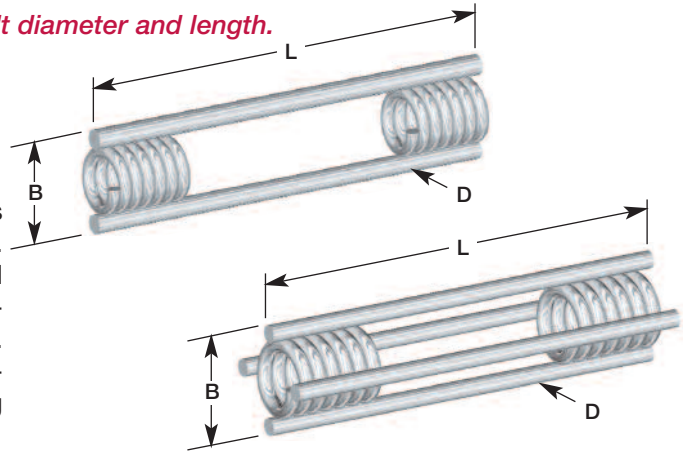
Safe working load is based on an approximate 2:1 safety factor and 3000 psi concrete. SWL based on 1/2" set-back from concrete surface. Minimum coil penetration warning on Page 47 applies.

To Order, Specify: quantity, type, safe working load, bolt diameter and length.

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(2200) CT-2 COIL TIE INSERT – TWO STRUT (2204) CT-4 COIL TIE INSERT – FOUR STRUT

The versatile CT-2 and CT-4 Coil Ties are often used as inserts and are very effective in reanchoring applications. The CT-4 is often used in lifting and handling thin wall concrete sections. The accompanying Table lists numerous standard sizes to fit a broad range of applications. Other lengths are available, contact a Meadow Burke representative for additional information. Minimum spacing of inserts shall be double the minimum edge distance.



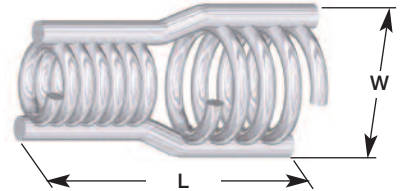
CT-2 & CT-4 COIL TIE INSERT DATA							
Insert Type	Bolt Diameter	Insert Length (L)	Safe Work Load (Tension) (lbs)	B	Coil Length (C)	Wire Diameter (D)	Minimum Edge Distance
CT-2	3/4"	6"	9,000	1-5/8"	1-3/4"	.375"	8"
CT-2	1"	6"	12,000	2-3/8"	2-1/16"	.440"	10"
CT-2	1-1/4"	8"	15,000	2-1/2"	2-1/16"	.440"	10"
CT-4	3/4"	6"	12,000	1-5/8"	2-1/16"	.375"	10"
CT-4	1"	8"	18,000	2-1/16"	2-1/16"	.375"	10"
CT-4	1"	12"	18,000	2-1/16"	2-1/16"	.375"	10"
CT-4	1-1/4"	8"	18,000	2-1/2"	2-1/16"	.440"	10"
CT-4	1-1/4"	12"	27,000	2-1/2"	2-1/16"	.440"	15"

Safe working load is based on an approximate 2:1 safety factor and 3000 psi concrete. SWL based on 1/2" set-back from concrete surface. Minimum coil penetration warning on Page 47 applies.

To Order, Specify: quantity, type, safe working load, bolt diameter and length.

(2210) CX-51 OPEN COIL INSERT

The CX-51 Open Coil Inserts are manufactured with a standard coil connected to an expanded coil by resistance-welded struts. They are available in 3/4", 1", 1-1/4" and 1-1/2" diameters with two to six struts, depending on the model. Refer to the Table for sizes, dimensions and safe working loads. The Open Coil Insert is also available with a mounting washer for applications requiring the insert to be nailed to the form. Minimum spacing of inserts shall be double the minimum edge distance.



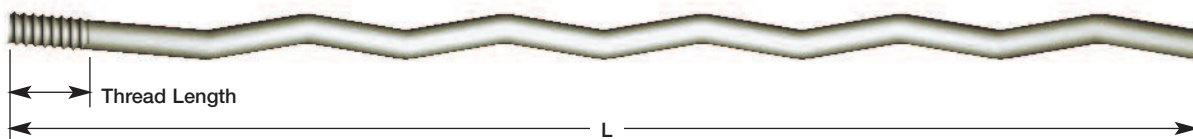
CX-51 OPEN COIL INSERT DATA										
Bolt Diameter	Insert Lgth (L)	Safe Work Load		# of Struts	B	Coil Length (C)	Wire Diameter (D)	Open Coil Lgth (E)	W	Minimum Edge Distance
		Tension	Shear							
3/4"	6"	8,500	8,500	2	1 3/4"	1 3/4"	.375"	1-1/2"	2-1/8"	6"
1"	6"	12,500	12,500	2	2-1/4"	2 1/16"	.440"	2-1/4"	2-1/2"	7"
1"	8"	20,000	24,000	4	2-1/4"	2 1/16"	.440"	2-3/4"	2-3/4"	10"
1 1/4"	6"	24,000	24,000	4	2 1/2"	2 5/16"	.440"	2-3/4"	3"	10"
1 1/4"	8"	32,000	32,500	6	2 1/2"	2 5/16"	.440"	3-5/8"	3"	12"
1 1/2"	12"	32,000	32,500	6	2 3/4"	2 9/16"	.440"	3-5/8"	3"	12"

Safe working load is based on an approximate 2:1 safety factor and 3000 psi concrete. Minimum coil penetration warning on Page 47 applies.

To Order, Specify: quantity, type, safe working load, bolt diameter and length.

(2215) HD-34 PIGTAIL CRIMPED ANCHOR

The HD-34 Pigtail Crimped Anchors are used with She Bolts to anchor cantilevered forms. They are available in 1/2", 3/4" and 1" diameters with the thread lengths and overall lengths noted in the Table. Other lengths are available on special order. The edge distance from the top of the pour should never be less than 6" when using Pigtail Crimped Anchors in a reanchoring application.



HD-34 PIGTAIL CRIMPED ANCHOR DATA			
Bolt Diameter	Overall Length (L)	Thread Length	Safe Work Load (lbs)
1/2"	18"	1-1/4"	9,000
3/4"	24"	1-3/4"	18,000
1"	36"	2-1/4"	38,000

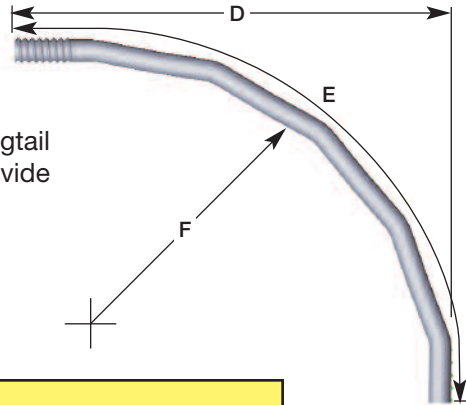
Safe working load is based on an approximate 2:1 safety factor.

To Order, Specify: quantity, type, safe working load, bolt diameter and length.

Form Anchorage

(2220) HD-35 RADIUSSED CRIMPED ANCHOR

The HD-35 Radiused Crimped Anchor is similar to the Pigtail Crimped Anchor but is manufactured with a large radius to provide greater working loads in thin wall sections.



HD-35 RADIUSSED CRIMPED ANCHOR DATA				
Bolt Diameter	Overall Length (E)	Width (D)	Radius (F)	Safe Work Load (lbs)
1/2"	24"	10"	4"	9,000
3/4"	30"	12"	6"	19,000
1"	42"	14"	8"	37,500

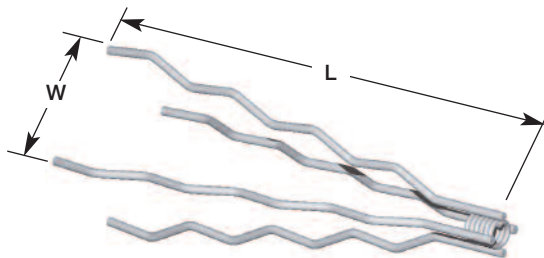
Safe working load is based on an approximate 2:1 safety factor.

To Order, Specify: quantity, type, safe working load, bolt diameter and length.

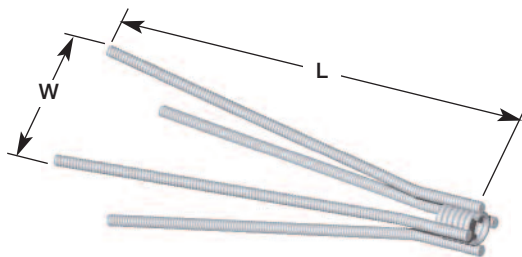
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- (2225) CX-61 Four Strut Coil Insert – Pigtail Crimped Anchor
- (2226) CX-62 Four Strut Coil Insert – Straight
- (2227) CX-63 Four Struct Coil Insert – Radiused

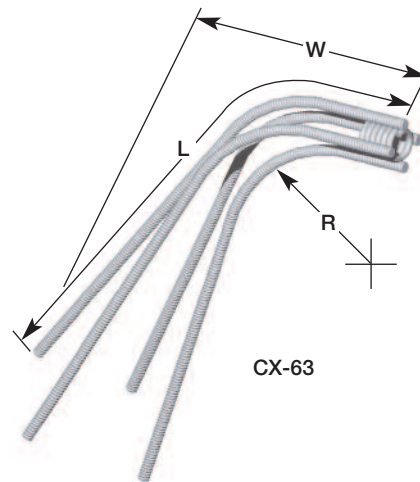
The CX-61, CX-62 and CX-63 Special inserts can be manufactured to meet your unusual forming requirements, and are often used as alternatives for cantilever formwork. The CX-61 is made using four pigtail crimped struts resistance welded to a coil. The CX-62 and CX-63 are made using coil rod bent into a specified configuration. These products are made to order.



CX-61



CX-62



CX-63

To Order, Specify: quantity, type, bolt diameter, "L," "W" and "R" dimension (if applicable).

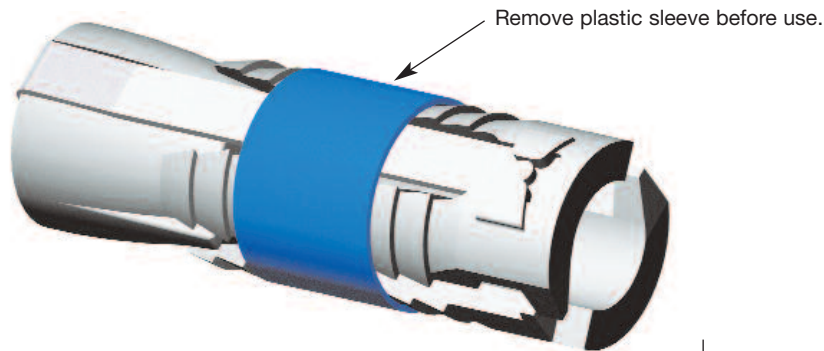
(2230) HD-46 ROCK ANCHOR

The HD-46 Rock Anchor is a component part used together with CR-4 coil rod to provide an anchorage assembly for one-sided forming applications. It is available for use with 1/2", 3/4", and 1" coil rod diameter. NC thread is available on special order only.

GENERAL INSTALLATION PROCEDURE

- 1) Thread the rock anchor onto the coil rod, such that the coil rod stops when contacting the anchor backstop.
- 2) Remove the plastic retaining sleeve from the anchor allowing the anchor wedges to become operational.
- 3) Bore a hole perpendicular to the load bearing surface. Deviation from perpendicular will result in lower capacities of the rock anchor.
- 4) Extreme care should be taken when boring the hole. Any boring operation that results in over-sizing the hole must be avoided.
- 5) Install the rock anchor threaded onto the coil rod into the bored hole. Rock anchor should "bottom out" in the hole.
- 6) The coil rod can now be tightened drawing the anchor wedges forward, causing the anchor to "wedge" itself in the rock strata.
- 7) Actual rock anchor capacity should be determined by field tests before any general use of the installed anchor assemblies.

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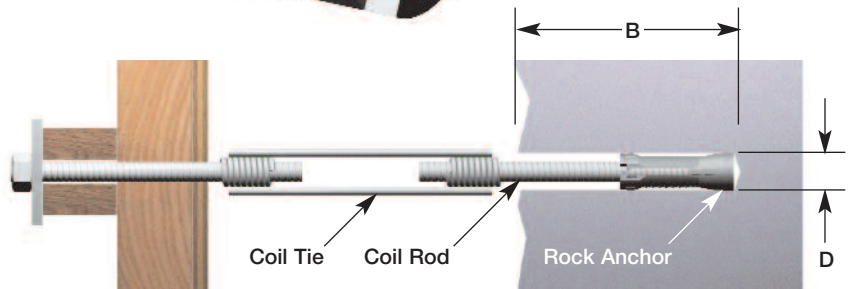


HD-46 ROCK ANCHOR DATA			
Bolt Dia.	Dia. (D)	Bore Depth (B)	SWL* (lbs)
1/2"	1-3/8"	6"	4500
3/4"	1-5/8"	8"	9000
1"	1-3/4"	10"	18,000

Safe working load is based on an approximate 2:1 safety factor.

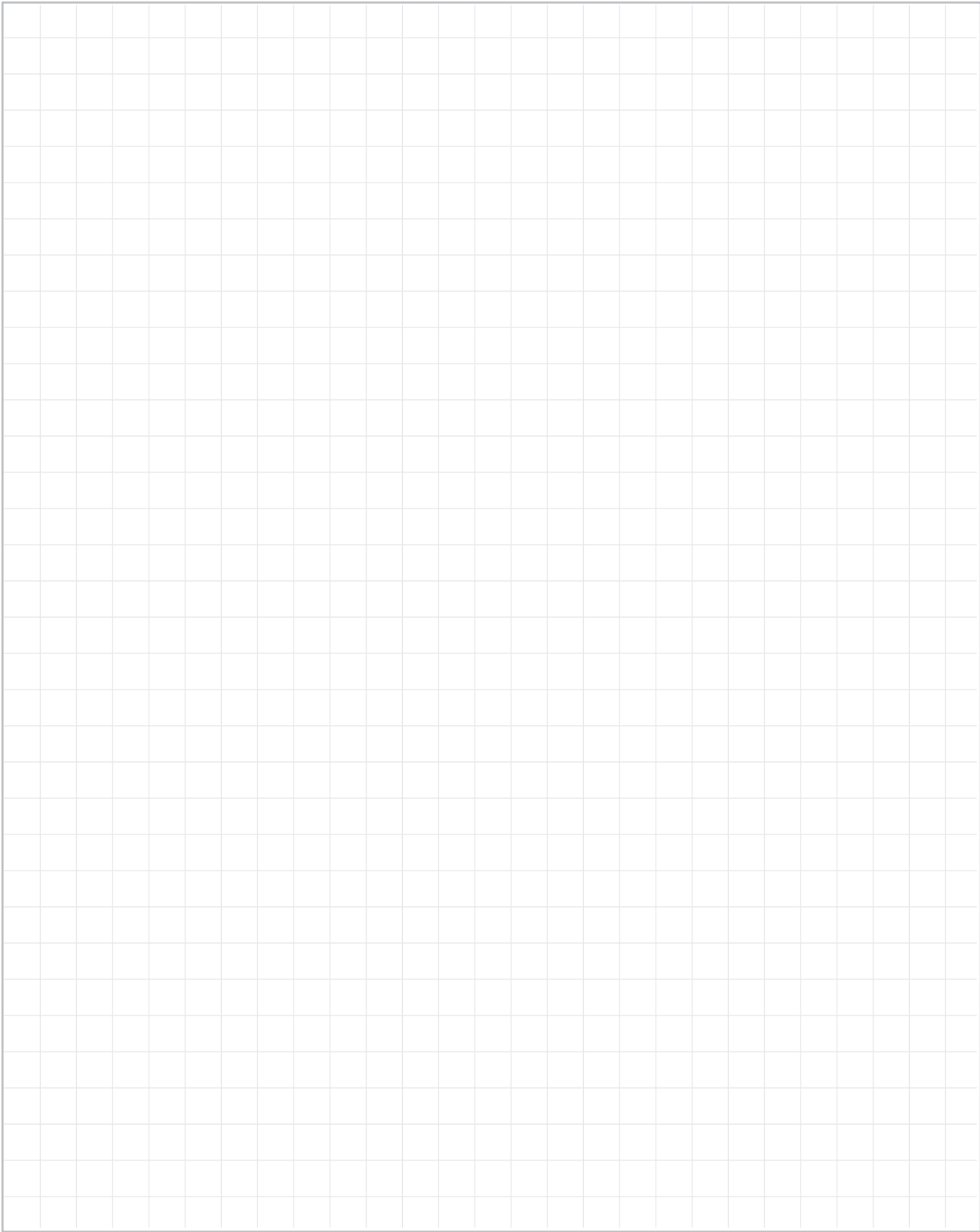
* Due to many variables, field tests must be performed to determine actual SWL.

To Order, Specify: quantity, type, safe working load, and bolt diameter.

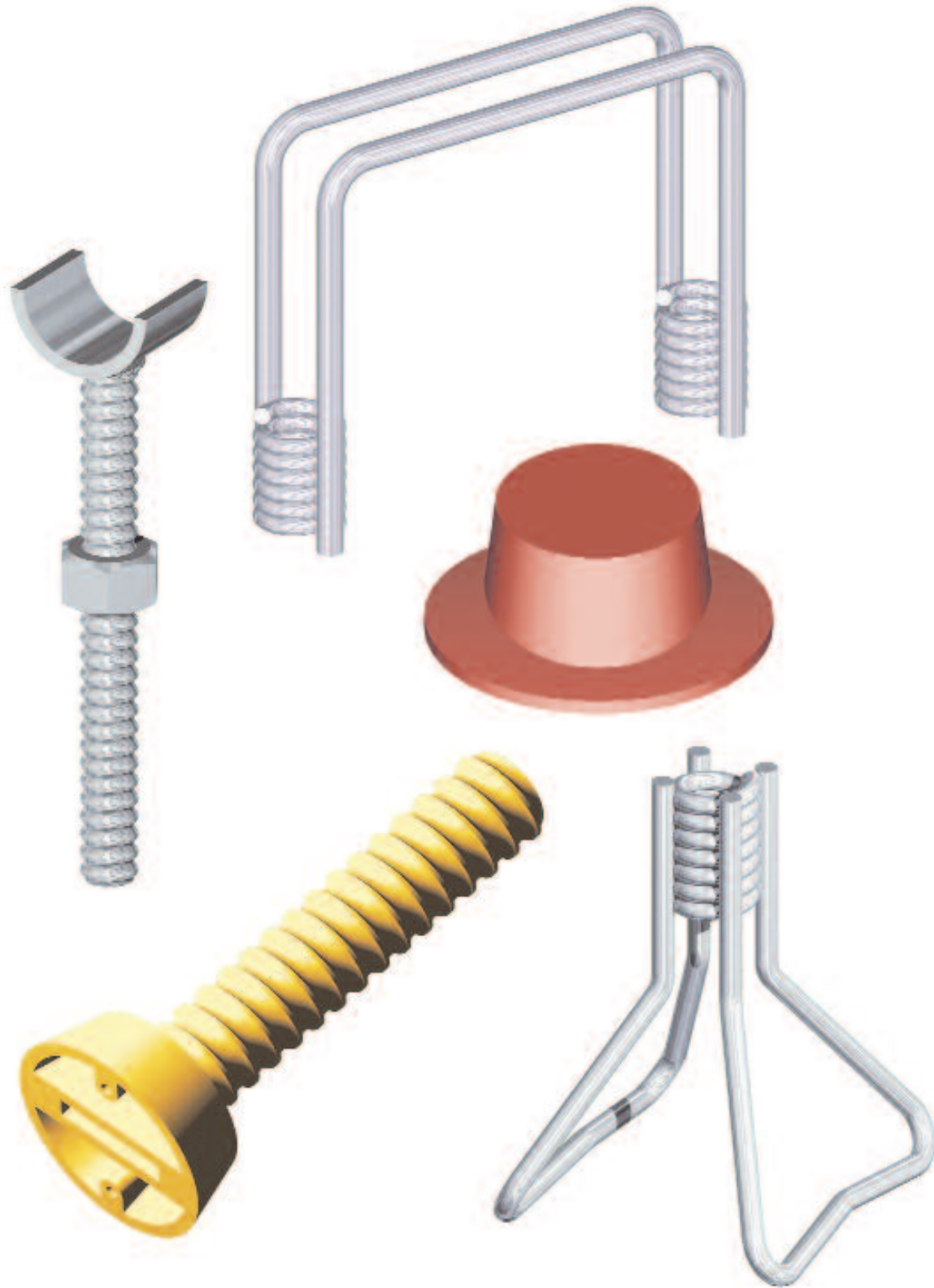


Concrete Forming Manual

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Medium and Heavy Forming Miscellaneous



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Medium and Heavy Forming Misc.

(2255) TIE HOLE PLUGS

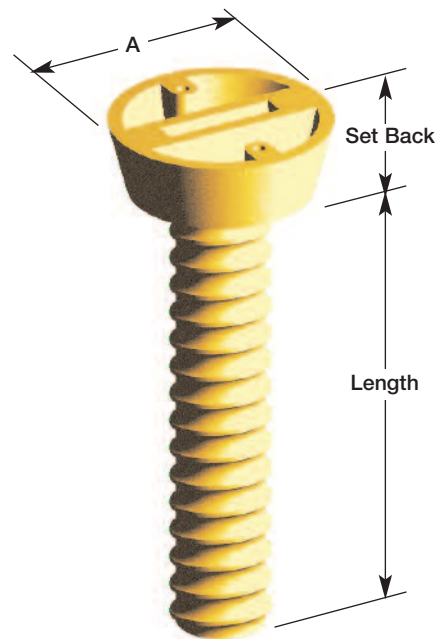
Tie Hole Plugs are plastic plugs available in 9/16" and 13/16" diameters used to temporarily fill holes in the formwork plywood.

To Order, Specify: quantity, type and diameter.



(2257) CP-2 COIL SETTING PLUG – PLASTIC

The CP-2 Coil Setting Plugs are available in 1/2", 3/4" and 1" diameters. They are effectively used to set inserts in the form by nailing the plug to the form face and then threading the coil insert onto the plug. The reusable plugs are easily removed from the concrete after the form has been stripped. The Coil Setting Plug can also be used as a temporary cap when another pour will be made at a later time.



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CP-2 COIL SETTING PLUG DATA			
Diameter	Set Back	Length	A
1/2"	1/2"	2"	1"
3/4"	3/4"	3-1/4"	1-1/2"
1"	3/4"	4-3/4"	1-3/4"

Safe working load is based on an approximate 2:1 safety factor.

To Order, Specify: quantity, type and diameter.

(2270) CS-8 & CS-9 STEEL STAKES

The CS-8 and CS-9 are fabricated from quality steel round bar. They are available in 3/4" and 7/8" diameters, with or without nail holes, in the standard lengths of 18", 24", 30", 36", 42" and 48".

CS-8 & CS-9 STEEL STAKE DATA	
Type	Diameter
CS-8	3/4"
CS-9	7/8"

To Order, Specify: quantity, type and diameter.



(2300) HF-12 SNAP TIE HANGER - STANDARD

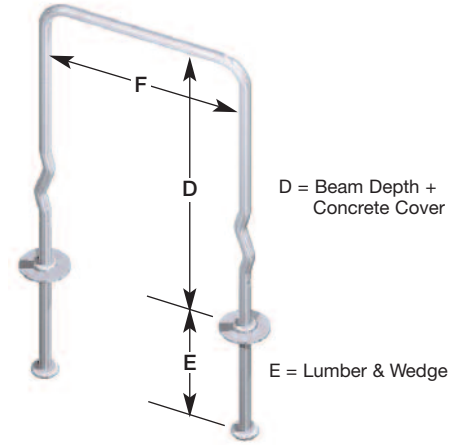
(2310) HF-14 SNAP TIE HANGER - HEAVY

The HF-12 & HF-14 Snap Tie Hangers are manufactured the same as normal snap ties and are then bent to fit specific beam dimensions. Metal washers or plastic spreader cones space the soffit in proper position. The hangers are furnished with a 1/2" breakback to allow the tie to be broken back from the face of the concrete. Snap Tie hangers are available in standard and heavy versions for use with light 2x4 type of forming.

HF-12 & HF-14 SNAP TIE HANGER DATA		
TYPE	SWL in (lbs)	
HF-12-Std.	1,500/side	
HF-14-Hvy.	2,000/side	

Safe working load is based on an approximate 2:1 safety factor.

To Order, Specify: quantity, type, beam width, beam depth, concrete cover, and lumber and wedge dimension.



(2315) HF-16 WIRE BEAM SADDLE WITH PLATE HANGER

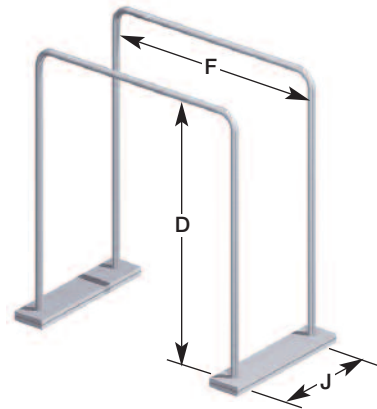
The HF-16 Wire Beam Saddle Hangers are fixed-length hangers suitable for light slab construction. They are fabricated to specific job requirements and are available in standard and heavy versions for 2x4 or 2x6 joist lumber. These hangers are designed for use with lumber joist material and should not be used to support metal joist applications.

HF-16 WIRE BEAM SADDLE DATA		
TYPE	WIRE	SWL in (lbs)
HF-16-Std.	#7	1,000/side
HF-16-Hvy.	#4	1,500/side

Not recommended for use on horizontal steel shoring - no warranty or guarantees apply.

Safe working load is based on an approximate 2:1 safety factor.

To Order, Specify: quantity, type, standard or heavy, beam width, total drop and joist material.



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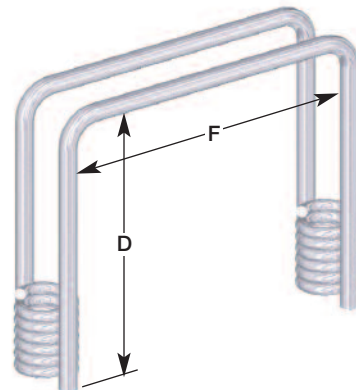
(2320) HF-18 COIL SADDLE HANGER

The HF-18 Coil Saddle Hanger is manufactured the same as a typical Coil Tie and then bent to the dimensions of a specific beam width. Coil Saddle Hangers are available in 1/2", 3/4" and 1" diameters and in lengths per job requirement. Minimum coil penetration warning on Page 45 applies.

HF-18 COIL SADDLE HANGER DATA		
TYPE	Coil Bolt Dia.	SWL in (lbs)
HF-18	1/2"	2,250/side
HF-18	3/4"	5,625/side
HF-18	1"	7,500/side

Safe working loads based on an approximate 2:1 safety factor.

To Order, Specify: quantity, type, standard or heavy, beam width, total drop and joist material.



Medium and Heavy Forming Misc.

(4320) CX-32 SCREED CHAIR – ADJUSTABLE

(4321) CH-37 PIPE HOLDER

The CX-32 Screed Chair – Adjustable, is available in 1/2" diameter x (2-1/2", 3-1/2", 5-1/2") heights for slabs from 4" up to 11-1/2" and a 3/4" diameter x 5-1/2" height for slabs from 9-1/2" up to 16".

The CH-37 Pipe Holder, is available in 1/2" or 3/4" diameter for use with screed chairs to obtain proper slab heights. To adjust the chair and pipe holder height for grade, hold the pipe holder stationary while turning the chair up or down.



CX-32



CH-37

CX-32 SCREED CHAIR & CX-37 PIPE HOLDER DATA					
CX-32 Chair #	Screed Chair Size	CH-37 Pipe #	Pipe Holder Size	Slab Thickness	
				Minimum	Maximum
1	1/2" x 2-1/2"	0	1/2" x 1-1/2"	3-1/2"	4-1/2"
1	1/2" x 2-1/2"	1	1/2" x 3"	4-1/2"	5-1/2"
2	1/2" x 3-1/2"	2	1/2" x 4"	5-1/2"	7-1/2"
3	1/2" x 5-1/2"	3	1/2" x 6"	7-1/2"	11-1/2"
4	3/4" x 5-1/2"	4	3/4" x 8"	9-1/2"	13-1/2"
4	3/4" x 5-1/2"	5	3/4" x 12"	13-1/2"	16-1/2"

64 All slab heights shown are based on 1" ID pipe (1-1/16" OD)

Warning: Products shown above are not intended to support mechanical screeding machines. For manual screed operations only.

To Order, Specify: quantity, type, number, diameter, height or length.

(4322) CX-31 SCREED CHAIR – ADJUSTABLE W/BASE

The CX-31 Screed Chair – Adjustable with Sand Plates, is the same as the CX-32 but with Sand Plates welded to the bottom for use on sand, fill dirt, vapor barrier, or other soft supporting materials. Use with CX-37 Pipe Holder. Table above also applies to the CX-31 Screed Chair.

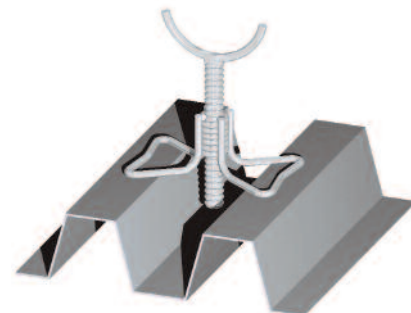
To Order, Specify: quantity, type, number, diameter, height or length.



(4323) CX-33 SCREED CHAIR – METAL DECK

The CX-33 Screed Chair – Metal Deck, is a modified CX-32 flattened to fit low profile and span across steel deck corrugations. Available in both 1/2" and 3/4" diameter.

To Order, Specify: quantity, type, diameter, height or length.



MeadowBurke

Medium and Heavy Forming Misc.

- (4325) **CX-34 SCREED CHAIR – FILL TYPE**
- (4326) **CX-38 SCREED CHAIR – DRIVE TYPE**

The CX-34 Screed Chair – Fill Type, provides four legs for increased stability when used on compacted fill for slab on grade applications. Available in both 1/2" and 3/4" diameter with heights same as CX-32.

The CX-38 Screed Chair – Drive Type, is designed with heavier wire to permit use in more densely compacted sub bases. This chair also available in both 1/2" and 3/4" diameter with heights same as the CX-32.

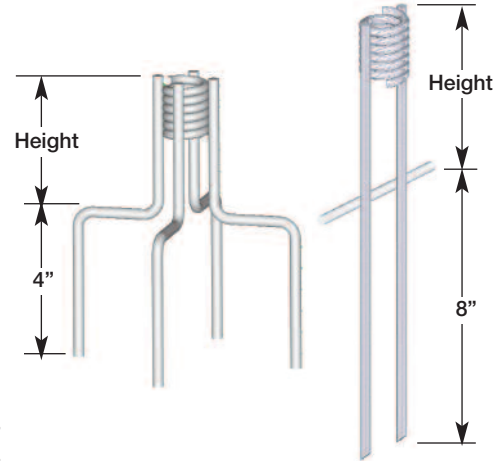
To Order, Specify: quantity, type, diameter and height.

- (4340) **CH-40 SCREED CHAIR – HEAVY DUTY**
- (4345) **CH-41 PIPE HOLDER – HEAVY DUTY**
- (4346) **CH-42 PIPE HOLDER – HEAVY DUTY with SET SCREWS**

The CH-40 Screed Chair – Heavy Duty, is designed as a heavy rigid chair based for use with vibratory screed equipment. This chair is made with four heavy legs equally spaced with cross bracing to prevent leg spreading. The heavy duty base features a single 1" diameter free-fit ferrule (no threads). Available heights are shown in the table below.

The CH-41 Pipe Holder has an open style cradle manufactured from 1/4" steel and will accept screed pipe up to 2" O.D. Cradle is welded to a 1" diameter coil rod and includes a 1" diameter coil nut. Height adjustment is made by turning the coil nut which raises or lowers the cradle.

The CH-42 has a closed style cradle and is manufactured from 1/4" steel and has two set screws that secures the screed pipe. This cradle accepts screed pipe up to 3" O.D. Cradle is welded to a 1" diameter coil rod and includes a 1" diameter coil nut. Height adjustment is made by turning the coil nut which raises or lowers the cradle.



CH-40

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CH-41



CH-42

CH-40, CH-41 & CH-42 HEAVY DUTY SCREED SLAB THICKNESS CHART							
Chair #	Chair Height	Pipe Holder # 4 1"x4-1/2"		Pipe Holder # 5 1"x6-3/4"		Pipe Holder # 6 1"x9-3/4"	
		Min.	Max.	Min.	Max.	Min.	Max.
7	3-1/2"	6-1/2"	8-1/2"	–	–	–	–
8	5-1/2"	8"	10"	9"	12-1/2"	12"	14-1/2"
9	8-1/2"	11"	13"	11-1/2"	15-1/2"	12"	18"

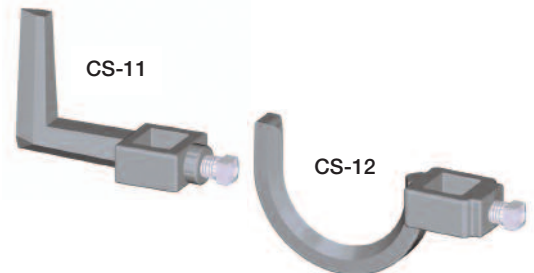
Heights based on use of 1-1/2" I.D. pipe (2" O.D.), recommended spacing is 2'0" C/C.
Safe working load of 800 lbs is based on an approximate 2:1 safety factor.

To Order, Specify: quantity, type, diameter, height or length.

- (4370) **CS-11 SCREED HOOK**
- (4375) **CS-12 SCREED HOOK**

The CS-11 & CS-12 Screed Hooks are available for quick positioning of pipe or rebar for screeding purposes. The hooks can be supported by metal stakes or #5 or #6 rebar driven into the fill. The hooks slide up and down for quick positioning and are securely held in place by the integral set screw. Will support up to #10 bars.

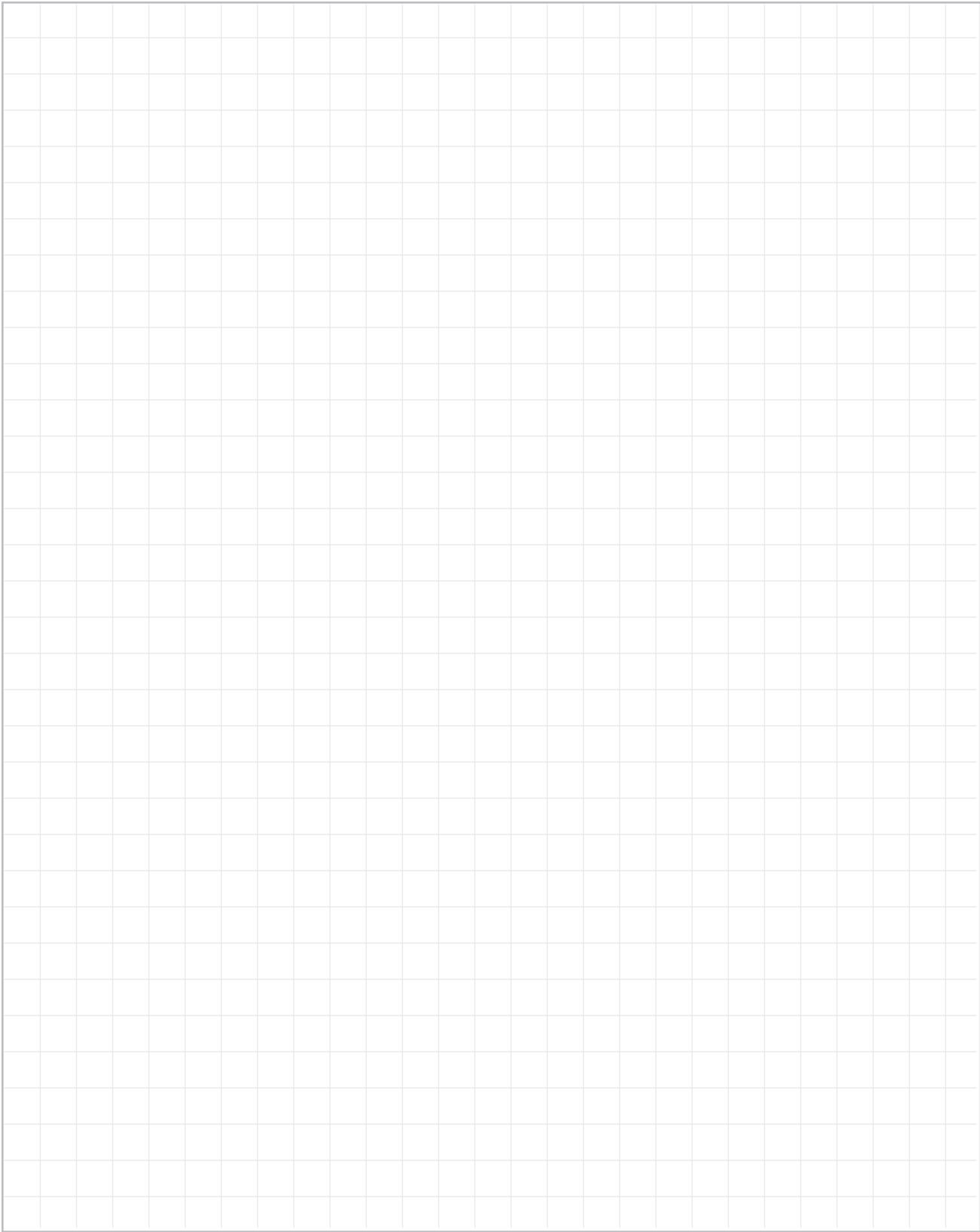
To Order, Specify: quantity and type.



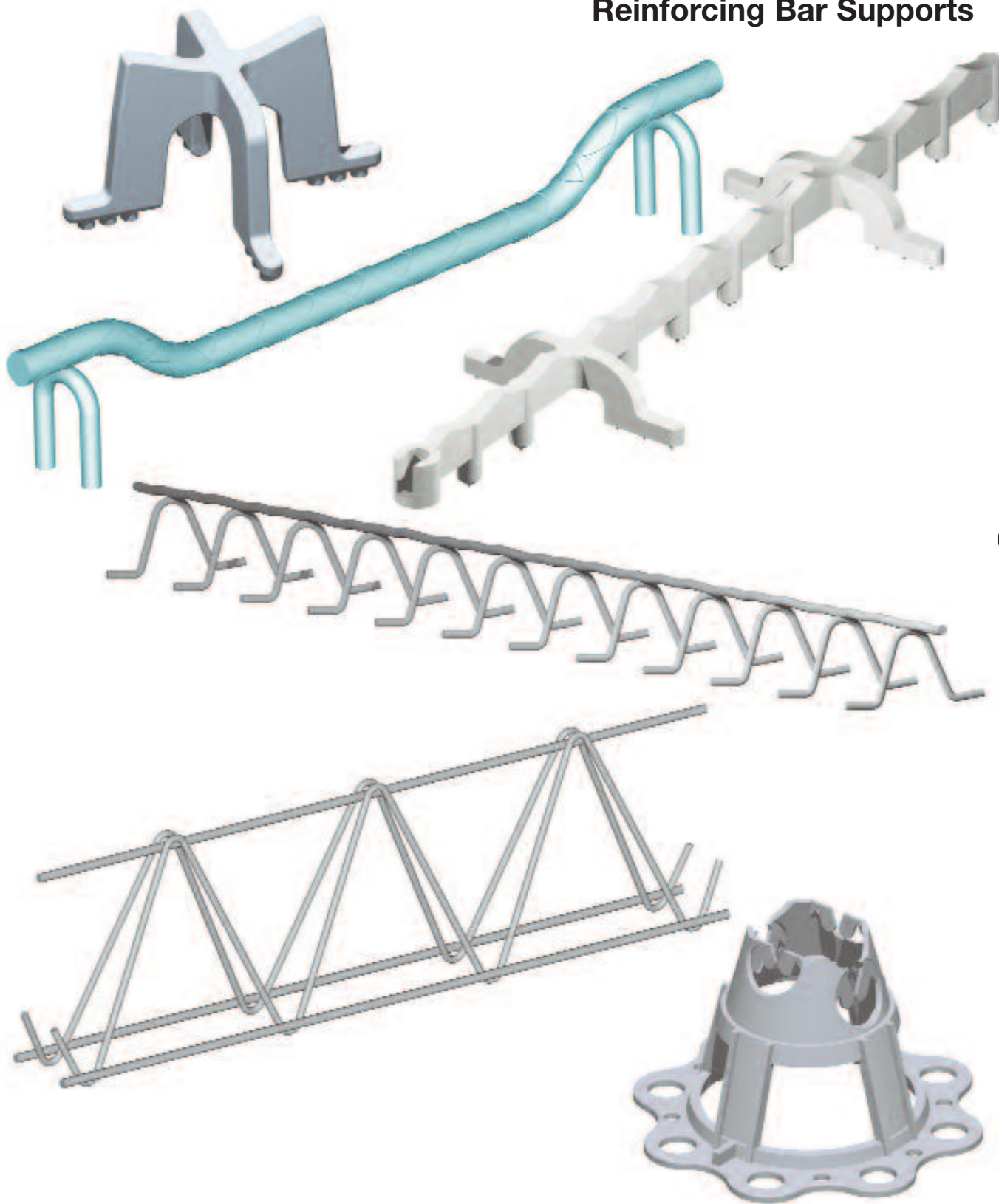
CS-11

CS-12

Concrete Forming Manual



Reinforcing Bar Supports



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Metal Reinforcing Bar Supports

Meadow Burke metal reinforcing bar supports (rebar supports) are manufactured in compliance with Concrete Reinforcing Steel Institute (CRSI) recommendations and comply with American Concrete Institute (ACI) ACI-SP-66, ACI-315 and ACI-315R.

Quality rebar metal supports are available in the following CRSI classifications for finishes:

- Class 1 – Plastic protected, dipped or tipped.
- Class 2A – Stainless steel protected, 1/4" stainless steel tipped.
- Class 2B – Stainless steel protected, 3/4" minimum stainless steel tipped.
- Class 3 – Plain wire, no protection.

Also available:

- Epoxy coated meeting AASHTO specifications.
- Complete plastic coating (100% encapsulate) up to 3" heights.
- Epoxy coated with plastic dipped feet.

Notes:

Hot dip galvanizing is no longer a CRSI recommended process.
 Stainless steel utilized by Meadow Burke in the manufacture of rebar supports conforms to ASTM A-493 and AISI Type 430 and may display some magnetic qualities which shall not be cause for rejection. Heights available in 1/4" increments.

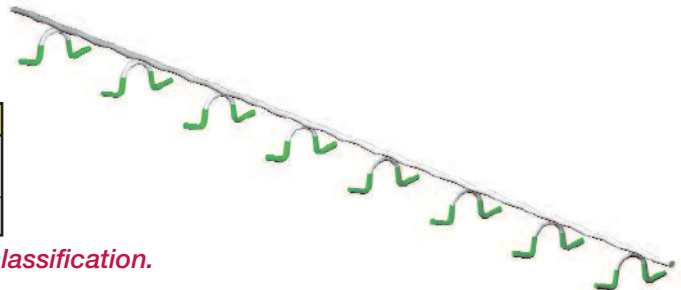
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METAL REINFORCING BAR SUPPORTS

(5001) (SB) SLAB BOLSTER

SLAB BOLSTER DATA			
Type	Available Height	Leg Spacing (c/c)	Length
SB	3/4" to 3"	5"	5'-0"

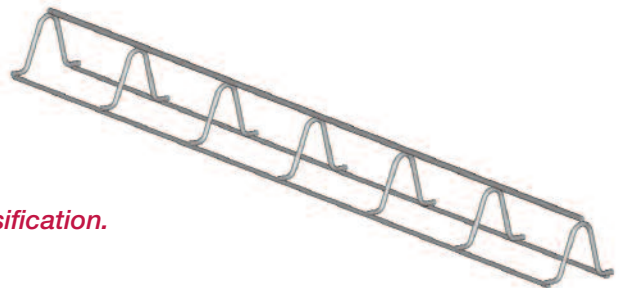
To Order, Specify: quantity, type, height and finish classification.



(5005) (SBR) SLAB BOLSTER – UPPER

SLAB BOLSTER - UPPER DATA			
Type	Available Height	Leg Spacing (c/c)	Length
SBR	3/4" to 3"	5"	5'-0"

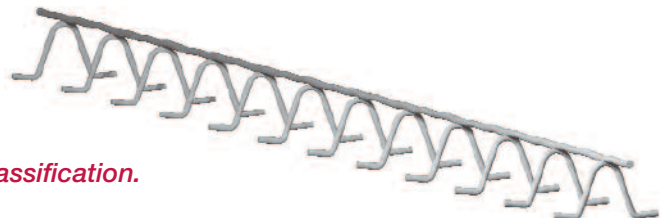
To Order, Specify: quantity, type, height and finish classification.



(5015) (BB) BEAM BOLSTER

BEAM BOLSTER DATA			
Type	Available Height	Leg Spacing (c/c)	Length
BB	1" to 5"	2-1/2"	5'-0"

To Order, Specify: quantity, type, height and finish classification.



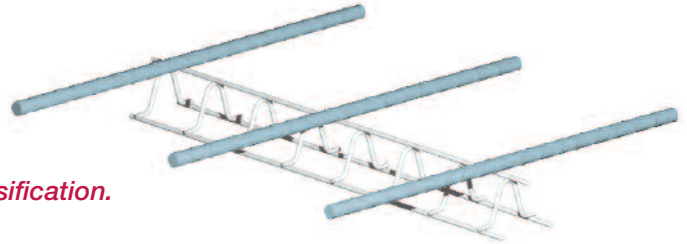
MeadowBurke

Metal Reinforcing Bar Supports

(5025) (UBB) BEAM BOLSTER – UPPER

BEAM BOLSTER - UPPER DATA			
Type	Available Height	Leg Spacing (c/c)	Length
UBB	1" to 5"	2-1/2"	5'-0"

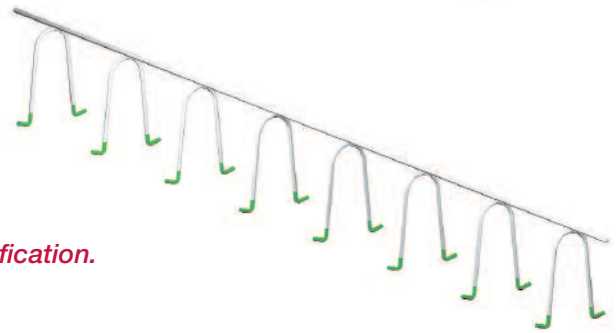
To Order, Specify: quantity, type, height and finish classification.



(5035) (CHC) CONTINUOUS HIGH CHAIR

CONTINUOUS HIGH CHAIR DATA			
Type	Available Height	Leg Spacing (c/c)	Length
CHC	2" to 20"	8"	5'-0"

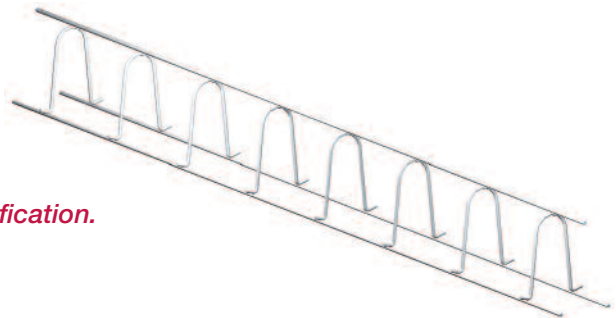
To Order, Specify: quantity, type, height and finish classification.



(5040) (UHC) CONTINUOUS HIGH CHAIR – UPPER

CONTINUOUS HIGH CHAIR - UPPER DATA			
Type	Available Height	Leg Spacing (c/c)	Length
UHC	2" to 20"	8"	5'-0"

To Order, Specify: quantity, type, height and finish classification.

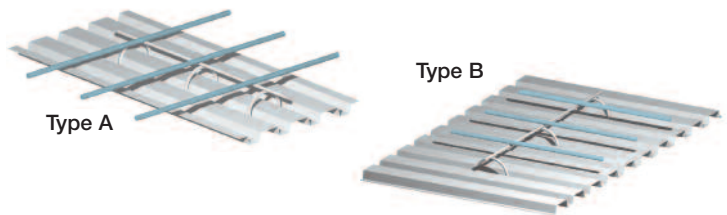


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(5050) (CHCM) CONTINUOUS HIGH CHAIR – METAL DECK

CONTINUOUS HIGH CHAIR - METAL DECK DATA			
CHCM	Available Height	Leg Spacing (c/c)	Length
Type A	1" to 5"	8"	5'-0"
Type B	1" to 5"	8"	5'-0"

To Order, Specify: quantity, name, type A or B, leg spread, height.

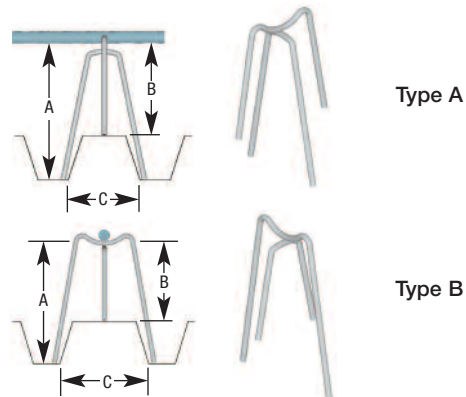


(5100) (HCMD) HIGH CHAIR – METAL DECK

HIGH CHAIR - METAL DECK DATA		
HCMD	Available Height	Height Increments
Type A or B	2" to 15"	1/4"

To Order, Specify: quantity, name, type, A, B and C dimension.

To insure accuracy of order please include metal deck profile.

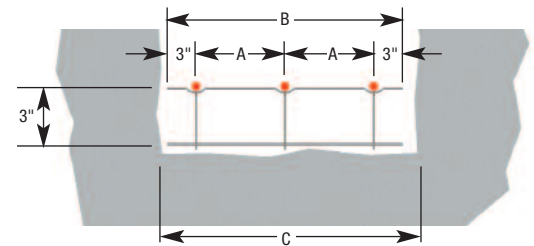
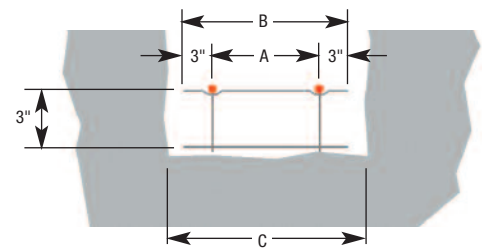
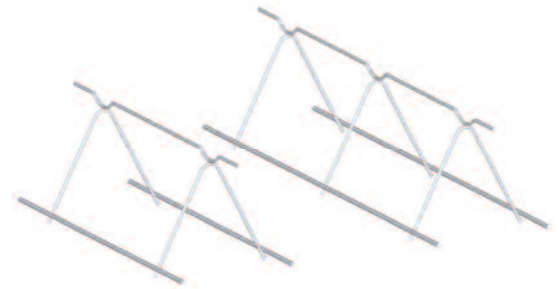


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Metal Reinforcing Bar Supports

(5060)(5062)(5065) FC-12, FC-16, FC-20 FOUNDATION CHAIRS

The FC-12, FC-16 and FC-20 Foundation Chairs unique design places maximum support under each rebar providing unmatched strength in other foundation chairs. Correctly spaced cradle points allow quick, correct placement of the reinforcing steel and provide three full inches of concrete cover under and on both sides of the rebar. Foundation Chairs are available for two-rebar and three-rebar foundation applications. Refer to the Table for dimensional data. Foundation chairs are normally spaced on 5'-0" centers. Optional sand plates are available for sandy soil applications.



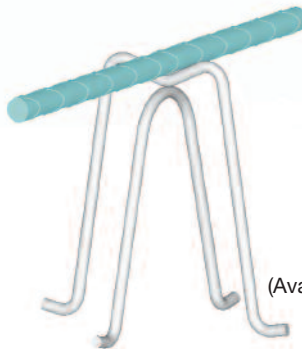
FC-12, FC-16 & FC-20 FOUNDATION CHAIR DATA					
Type	Size	Number of Rebar	"A" Rebar Spacing	"B" Chair Width	"C" Footing Width
FC-12	2-12	2	6"	8-1/2"	12"
FC-16	3-16	3	5"	13-1/4"	16"
FC-20	3-20	3	7"	17-1/2"	20"

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To Order, Specify: quantity, type, number of rebar, length and finish.

(5075) (HC) HIGH CHAIR

HIGH CHAIR DATA		
Type	Available Height	Height Increments
HC	2" to 40"	1/4"



(Available with metal or plastic sand plate)

To Order, Specify: quantity, type, height and finish classification.

(5105) (BC) BAR CHAIR

BAR CHAIR DATA		
Type	Available Height	Height Increments
BC	3/4" to 2"	1/4"



To Order, Specify: quantity, type, height and finish classification.

(5115) (JC) JOIST CHAIR

JOIST CHAIR DATA		
Type	Available Height	Height Increments
JC	3/4" to 2"	1/4"

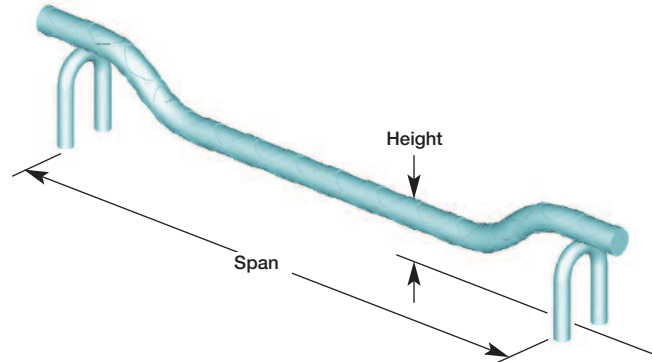


To Order, Specify: quantity, type, height and finish classification.

(5125) (UJC) JOIST CHAIR – UPPER

JOIST CHAIR - UPPER DATA		
Type	Available Height	SPAN
UJC	-1" to +3-1/2"	14"

To Order, Specify: quantity, type, height and finish classification.

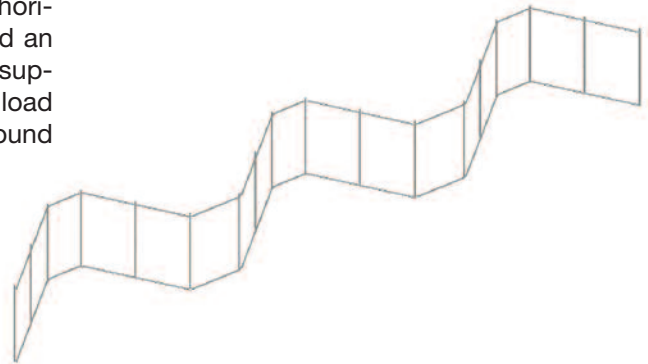


(5150) (CS) CONTINUOUS SUPPORT (ZIG-ZAG)

CS Continuous Support (Zig-Zag) is a steel support for horizontal wire mesh, structural fabric or reinforcing bars and an excellent spacer for vertical steel in concrete walls. The support is very stable, it will not slide or tip and has excellent load carrying capacity. It is easy to install and can be bent around voids and/or partitions.

CONTINUOUS SUPPORT (ZIG-ZAG) DATA			
Type	Available Height	Height Increments	Length
CS	2" to 12"	1/4"	8'-0"

To Order, Specify: quantity, type, height and finish classification.



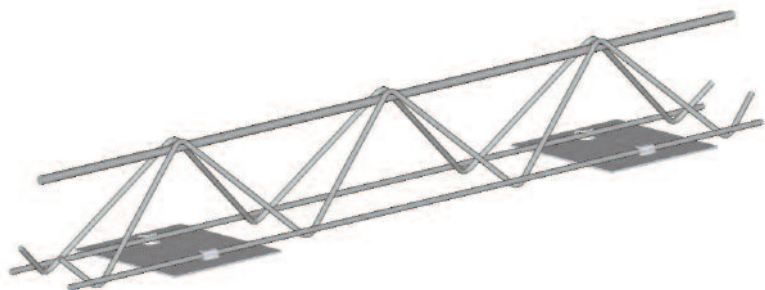
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(6610) WIRE GIRDER – DOUBLE

The Wire Girder – Double has been designed to quickly and accurately position wire mesh in large slab-on-grade applications. The girder is available in heights from 3" to 9" in 1" increments and in any length up to 40'. Optional snap-on sand plates are available for use on soft, sandy soils and to prevent the girder from turning during concrete placement. When using the girder on a firm casting bed, the snap-on plates are not a necessity but will give better support on slabs exceeding 6" in thickness.

The optional snap-on plates are field installed by simply squeezing the bottom runners of the girder inward until they slip inside the plate tabs. Release of the runners will let them slide under the tabs and be held firmly in place by the tabs.

*To Order Wire Girder - Double, Specify: quantity, type, height and length.
To Order Optional Snap-On Plate, Specify: quantity and type.*



Plastic Reinforcing Bar Supports

(5205) (SBB) SLAB BEAM BOLSTER

The SBB Slab Beam Bolster is fabricated from fiber-filled composite material. They are gray in color to blend with the concrete. The top bar corrugations are on 1" centers to aid rebar placement. It is available in 5' lengths and heights from 3/4" to 4" in 1/4" increments.

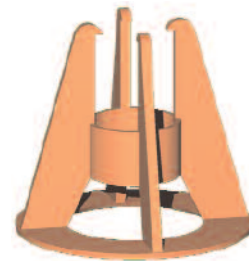
To Order, Specify: quantity, type and height.



(5230) (IC) INTERSECTIONAL CHAIR

The IC Intersectional Chair is designed for use at the intersection of two crossing lengths of post tensioning cables rebar to correctly position and firmly hold the two bars in place. The large support base gives added benefit when used on vapor barriers or soft fill. The chair fits 1/2" PT cable or up to #5 rebar, and is available in most heights from 1-1/2" to 7" in 1/2" increments.

To Order, Specify: quantity, type and height.



(5235) (MCB) MESH CHAIR WITH BASE

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The MCB Mesh Chair with Base is a special high chair with sand plate for use on soft surfaces and/or slab on grade to correctly position and hold the wire mesh securely in place. Each size chair is designed to service two mesh positioning heights. It is available in heights from 5/8" to 4". Can support up to #5 rebar crossing over up to #3 rebar.

To Order, Specify: quantity, type and height.

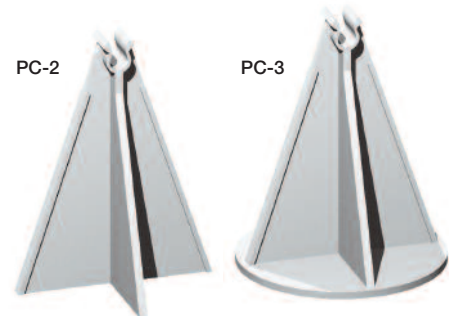


(5240) PC-2 SNAP-ON MESH CHAIR

(5245) PC-3 SNAP-ON MESH CHAIR WITH BASE

The PC-2 and PC-3 Snap-On Mesh Chairs are economical heavy duty, four sided chairs that quickly snap onto 4 ga. to 10 ga. mesh to correctly position it in the slab. The Snap-On Mesh Chair is available in most heights from 3/4" to 3" and the Snap-On Mesh Chair With Base is available in heights from 1-1/2" to 4". Both Chairs will accommodate wire mesh 4 ga. to 10 ga.

To Order, Specify: quantity, type and height.

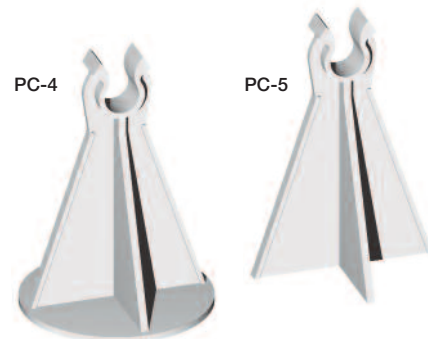


(5250) PC-4 SNAP-ON PAVING CHAIR WITH BASE

(5255) PC-5 SNAP-ON BAR CHAIR

The PC-4 Snap-On Paving Chair and PC-5 Snap-On Bar Chair are substantial plastic bar supports available to support reinforcing steel in various applications. The Snap-On Paving Chair for #3 to #4 rebar or #4 to #6 rebar (PC-4) is available in heights from 3/4" to 7" and the Snap-On Bar Chair for #3 to #7 rebar (PC-5) is available in heights from 3/4" to 3".

To Order, Specify: quantity, type and height.



(5265) (PBC) PLASTIC BAR CHAIR

The PBC Plastic Bar Chair is available in heights from 3/4" to 1-3/4" in 1/4" increments.

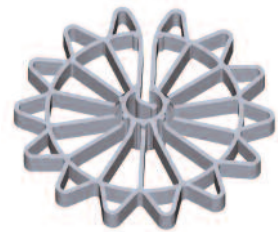
To Order, Specify: quantity, type and height.



(5300) PW-11 PLASWHEEL

The PW-11 Plaswheel is designed to quickly snap onto and space vertical or horizontal steel at side walls and columns. They are available to accommodate #2 through #8 rebar and provide 5/8" through 4" concrete cover.

To Order, Specify: quantity, type, bar size and cover.



(5305) PW-14 UNISPACER

The PW-14 Unispacer is an economical spacer available in one size to provide a 2" concrete cover. It slides onto any rebar up to #14 size and permits rotation and/or movement of the rebar without risk of the spacer coming off.

To Order, Specify: quantity and type.

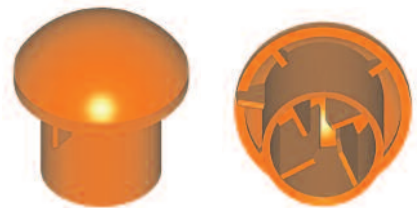


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(5350) BC-2, BC-4 BAR CAP

The BC-2 and BC-4 Bar Cap is available in two sizes for the purpose of protection from scrapes, cuts and torn clothing caused by protruding rebar. It is not intended for use as an impalement protector. The small size BC-2 accepts rebar sizes #3 through #8 and the larger size BC-4 accepts rebar from #9 through #14.

To Order, Specify: quantity, type and rebar size.



(5355) BC-6, BC-8 REBAR SAFETY CAP

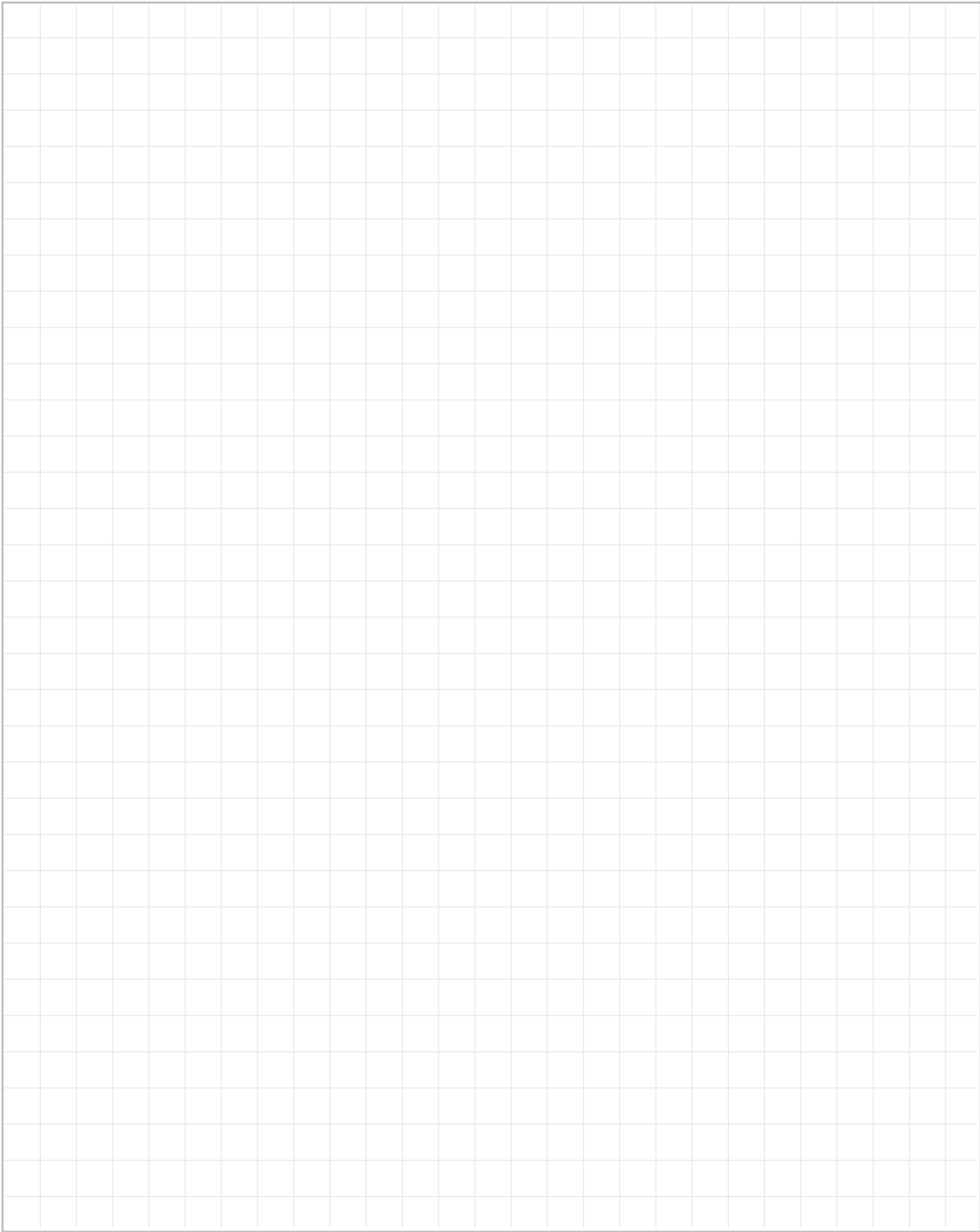
The BC-6 and BC-8 Rebar Safety Cap is an OSHA approved impalement protection safety cap. It is available in two sizes; the smaller size BC-6 accepts rebar sizes #3 through #8 and the larger size BC-8 will accommodate rebar sizes #7 through #12.

To Order, Specify: quantity, type and size.

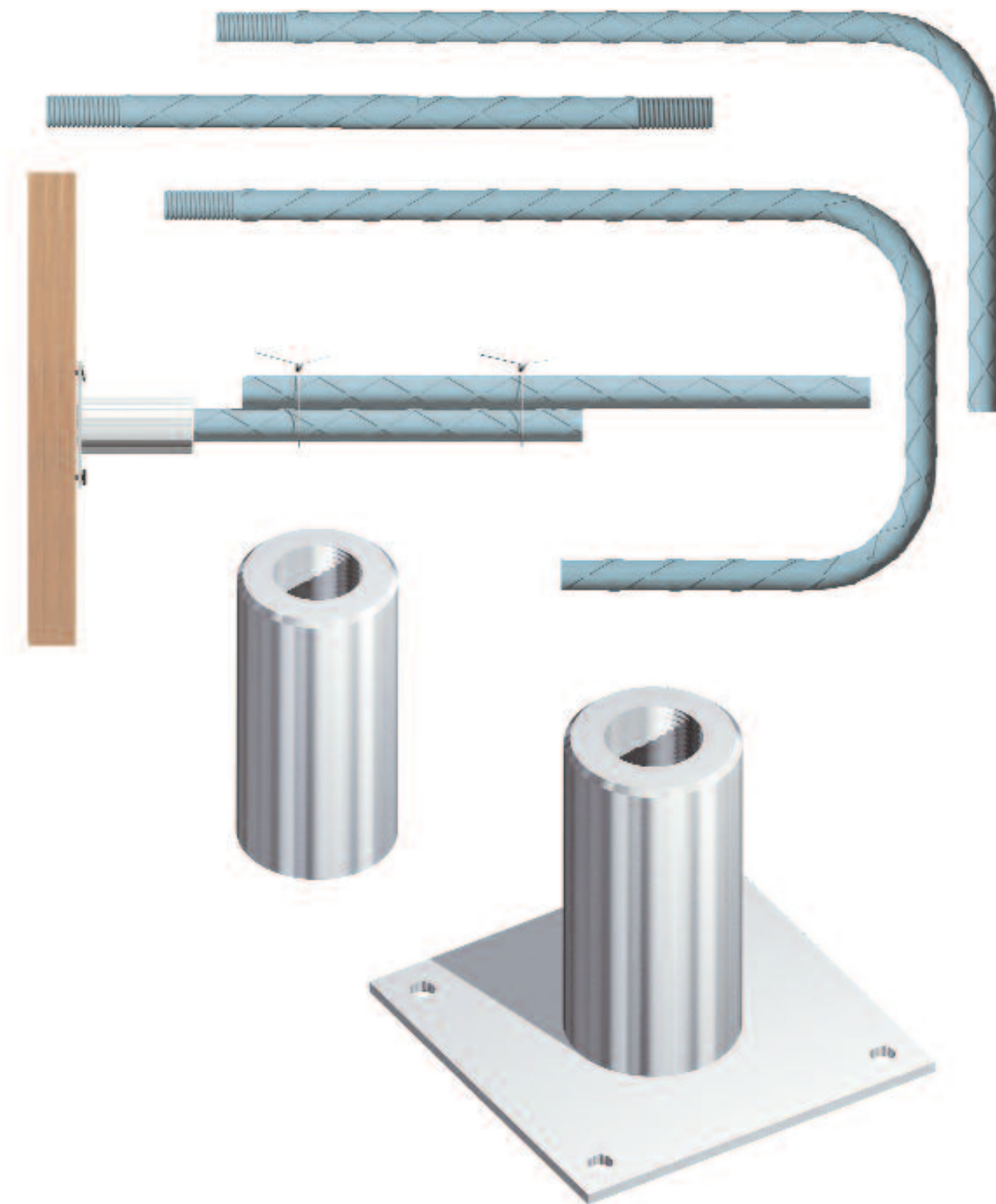


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Rebar Splicing Products



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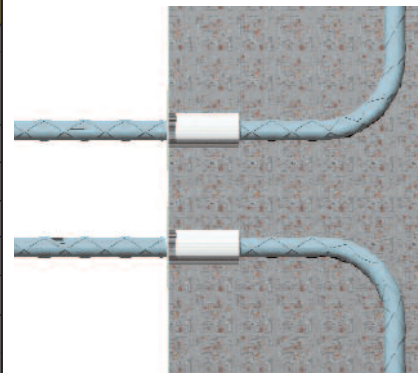
Rebar Splicing Products

THREADED SPLICE SYSTEM

The Threaded Splice System is designed to eliminate protruding rebar problems. OSHA requirements pertaining to workmen protection from protruding rebar has become a source of added concern and expense. Use of the Threaded Splice System helps eliminate the exposed rebar problem. It offers complete workman safety, reduces costs related to injuries and reduces the need for expensive rebar protectors.

The Threaded Splice System consists of a threaded rebar coupler and a threaded splice bar and complies with ACI 318 that requires mechanical splices to develop 125% of the specified rebar yield strength. Refer to the Tables for coupler and bar data.

ASTM A-615 GRADE 60 REINFORCEMENT BAR DATA						
Bar Size Designation	Weight (lbs per lineal ft.)	Nominal Diameter	Cross Section Area (sq.in.)	Minimum Loads (lbs)		
				P_y	$1.25 P_y$	$1.5 P_y = P_{ult}$
#4	0.668	.500	.20	12,000	15,000	18,000
#5	1.043	.625	.31	18,600	23,250	27,900
#6	1.502	.750	.44	26,400	33,000	39,600
#7	2.044	.875	.60	36,000	45,000	54,000
#8	2.670	1.000	.79	47,400	59,250	71,100
#9	3.400	1.125	1.00	60,000	75,000	90,000
#10	4.303	1.250	1.27	76,200	95,250	114,300
#11	5.313	1.410	1.56	93,600	117,000	140,400



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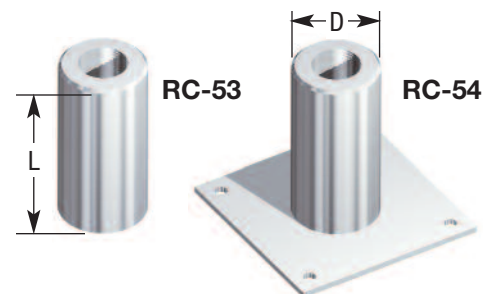
ACI 318 2005 Section (12.14.3.2) requires a full mechanical splice to develop at least 125% of the specified rebar yield strength (P_y). Threaded Rebar Splice must have ultimate strength (P_{ult}) equal to or greater than 125% of the specified rebar yield strength ($1.25 P_y$).

(5405) RC-53 THREADED REBAR COUPLER – SMOOTH

(5410) RC-54 THREADED REBAR COUPLER – SMOOTH/FLANGE

The RC-53 Threaded Rebar Coupler – Smooth and RC-54 Threaded Rebar Coupler – Smooth/Flange (RC-54) are available in rebar sizes #4 through #11. They are fabricated from quality bar stock and furnished with an internal positive thread stop. The flanged style is equipped with nail holes in the flange for convenient fastening to the form. Refer to the Table for dimensions and minimum load values.

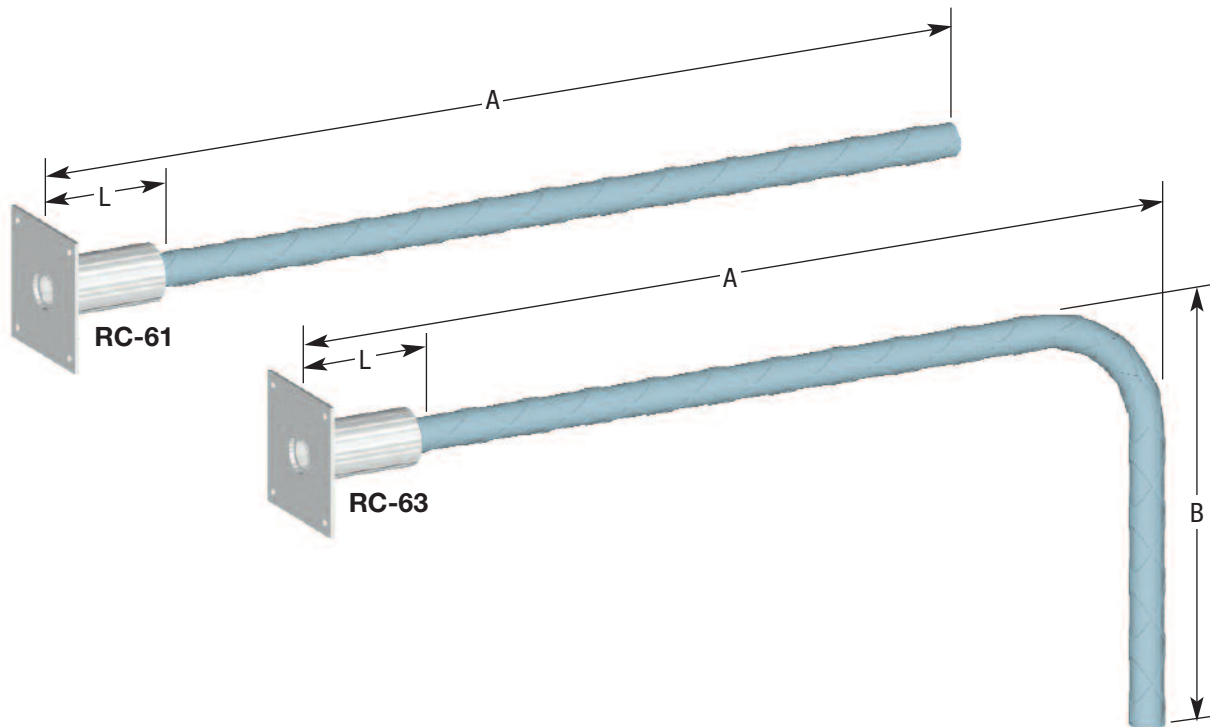
RC-53 & RC-54 REBAR COUPLER SELECTION DATA						
Coupler Size	Thread Size	Coupler Weight (lbs)	Coupler Length (L)	Coupler O.D. (D)	Optional Flange Size	Ultimate Load (lbs) $P_{ult} = 1.5P_y$
4	1/2 - 13 NC	.24	1-7/8"	7/8"	2 X 2	18,000
5	5/8 - 11 NC	.34	2-1/8"	1"	2 X 2	27,900
6	3/4 - 10 NC	.41	2-1/4"	1-1/8"	2 X 2	39,600
7	7/8 - 9 NC	.57	2-5/8"	1-1/4"	2 X 2	54,000
8	1 - 8 NC	1.08	3-1/4"	1-1/2"	2 X 2	71,100
9	1-1/8 - 7 NC	1.39	3-3/4"	1-5/8"	2 X 2	90,000
10	1-1/4 - 7 NC	2.61	4-1/4"	2"	2 X 2	114,300
11	1-3/8 - 6 NC	2.66	4-3/4"	2"	2 X 2	140,400



To Order, Specify: quantity, Type and bar size.

(5420)(5425) RC-61, RC-63 SETTING BAR ASSEMBLIES

Setting Bars are assemblies comprised of threaded rebar coupler and a length of Grade 60 deformed reinforcing steel threaded on one end. Setting Bars are available in all rebar sizes #4 through #11 and in any required length. The Setting Bar (RC-61) model is furnished straight for standard lap splice applications and the Setting Bar (RC-63) is furnished with a 90° bend. All setting bars are manufactured to furnished job specifications.



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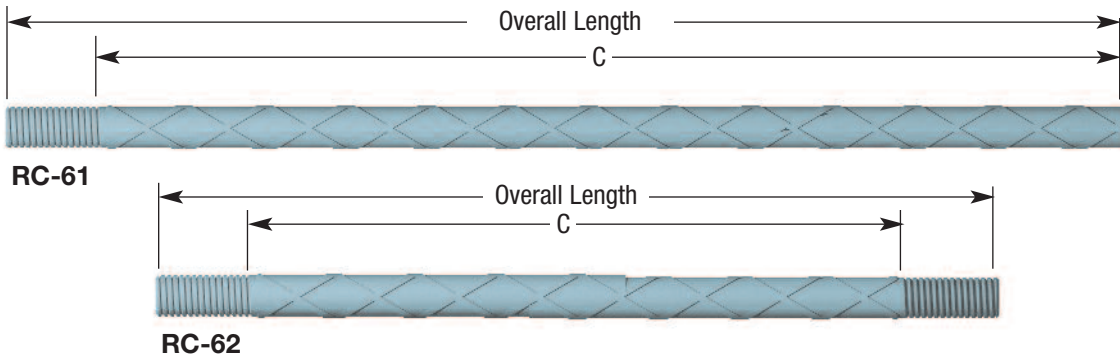
To Order, Specify:

For Setting Bar (RC-61) – quantity, type, rebar size and overall length. (“A” + “L”)

For Setting Bar (RC-63) – quantity, type, rebar size, “A” and “B” dimensions.

Rebar Splicing Products

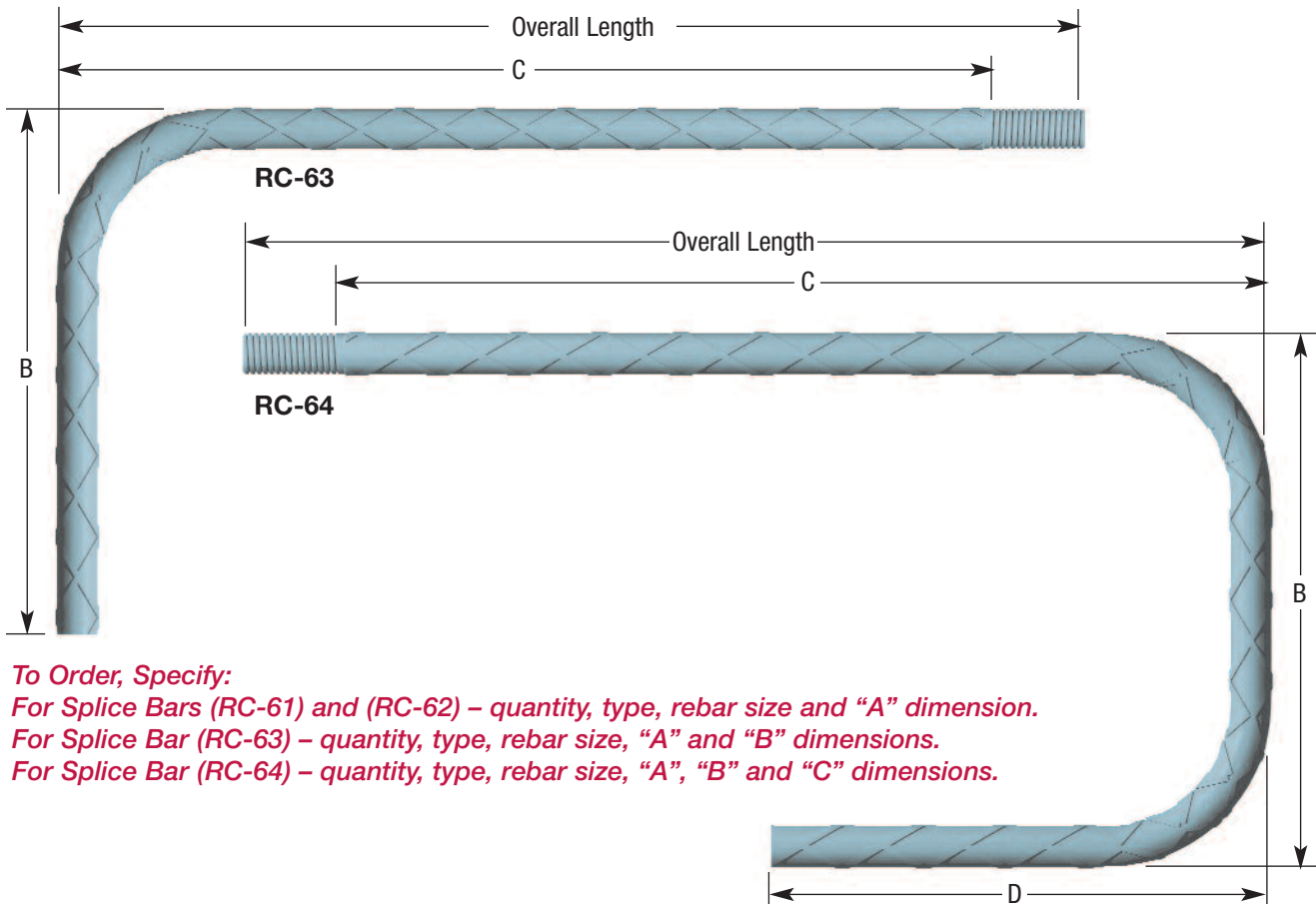
(5430)(5435)(5440)(5445) RC-61, RC-62, RC-63, RC-64 SPLICE BARS



The RC-61, RC-62, RC-63 and RC-64 Splice Bars are manufactured from Grade 60 deformed rebar material and are available in all of the corresponding sizes to the Threaded Rebar Coupler. After the Setting Bar has been placed and the concrete has set the Splice Bar is threaded into the Setting Bar to complete the splice. Splice Bars are available in the following configurations: RC-61 straight, RC-63 90° bend, RC-62 threaded at both ends and with a RC-64 return bend.

For Hook Bar development lengths actual dimensions A, B, C and R are functions of f'_c (concrete strength), PSI and minimums based on ACI-318-05 section 12.5 both code and commentary.

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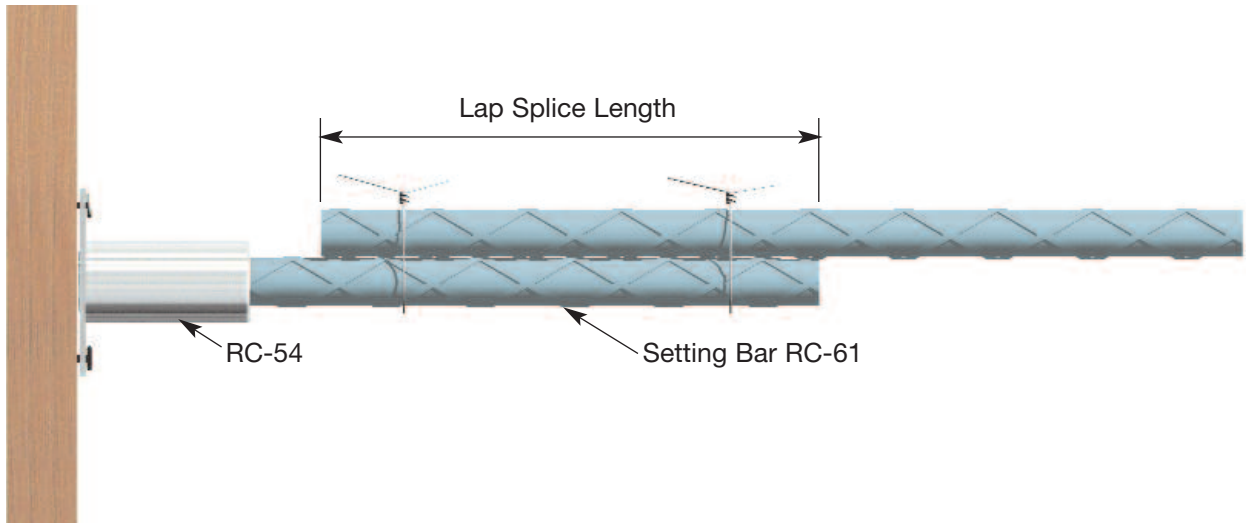
To Order, Specify:

For Splice Bars (RC-61) and (RC-62) – quantity, type, rebar size and “A” dimension.

For Splice Bar (RC-63) – quantity, type, rebar size, “A” and “B” dimensions.

For Splice Bar (RC-64) – quantity, type, rebar size, “A”, “B” and “C” dimensions.

TENSION SPLICE LAP LENGTH DATA



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LAP SPLICE LENGTH OF DEFORMED BARS IN TENSION			
CASE	f'_c (psi)	No. 6 and Smaller Bars	No. 7 and Larger Bars
Clear spacing of bars or wires being developed or spliced not less than d_b , clear cover not less than d_b and stirrups or ties throughout l_d not less than the code minimum or clear spacing of bars or wires being developed or spliced not less than $2d_b$ and clear cover not less than d_b (ACI 318-05 section 12.2.2)	3000	44 d_b	55 d_b
	4000	38 d_b	48 d_b
	5000	34 d_b	43 d_b
	6000	31 d_b	39 d_b
	8000	27 d_b	34 d_b
	10000	24 d_b	30 d_b
Other Cases (ACI 318-05 section 12.2.2)	3000	66 d_b	83 d_b
	4000	57 d_b	72 d_b
	5000	51 d_b	64 d_b
	6000	47 d_b	59 d_b
	8000	41 d_b	51 d_b
	10000	36 d_b	45 d_b

Table is based on the following criteria:

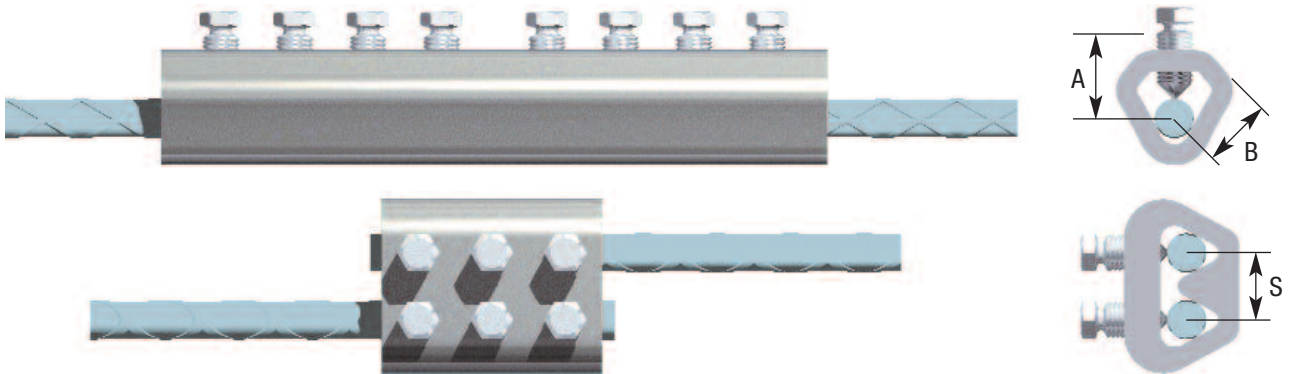
1. Grade 60 reinforcing steel bars.
2. Normal weight concrete factor $\lambda=1.0$.
3. Uncoated reinforcement factor, $\beta=1.0$.
4. Reinforcement location factor, $\alpha=1.0$.

Rebar Splicing Products

(5460) ZAP SCREWLOCK®

(5465) DOUBLE ZAP SCREWLOCK®

The ZAP Screwlock® is a high strength mechanical rebar connection device available for splicing #4 through #11 rebar. No rebar end preparation is required. Simply insert the ends of the two bars into the connector body. A positive center stop ensures proper installation.

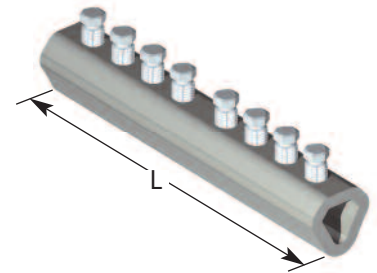


Tightening the lock-bolts generates a positive mechanical interlock as the rebar deformations are pressed into the ductile steel wedge-shaped body of the connector. Visual inspection is easily accomplished; just verify that the heads of the lock-bolts have sheared off during the tightening sequence.

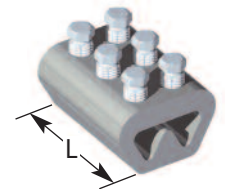
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The ZAP SCREWLOCK exceeds 125% of the specified yield strength of the rebar and is approved by or meets the following: ACI-318, ICBO and AASHTO.

ZAP SCREWLOCK DATA							
Bar Size	Nominal Coupler Wt. (lbs)	Coupler Lgth. "L" (in.)	Ave. Dim. "A" (in.)	Dimension "B" (in.)	Number of Screws / Bar	Torque (Ave.) (ft.-lbs.)	Hex Head Ø
#4	1.9	7"	1-1/16"	11/16"	3	50	1/2"
#5	3.7	9"	1-1/8"	3/4"	4	50	1/2"
#6	5.2	11"	1-3/16"	15/16"	5	50	1/2"
#7	7.6	13"	1-1/4"	1-1/16"	5	100	5/8"
#8	10.3	15-1/4"	1-5/16"	1-1/16"	6	100	5/8"
#9	16.9	16-3/4"	1-5/8"	1-1/4"	6	200	3/4"
#10	21.7	19-1/8"	1-11/16"	1-7/16"	7	200	3/4"
#11	24.7	21-1/2"	1-13/16"	1-1/2"	8	200	3/4"



DOUBLE ZAP SCREWLOCK DATA								
Bar Size	Nominal Coupler Wt. (lbs)	Coupler Lgth. "L" (in.)	Ave. Dim. "A" (in.)	Dimension "B" (in.)	Dimension "S" (in.)	Number of Screws / Bar	Torque (Ave.) (ft.-lbs.)	Hex Head Ø
#4	1.3	2-1/8"	1-1/16"	1/2"	15/16"	2	50	1/2"
#5	2.3	3"	1-1/8"	5/8"	15/16"	3	50	1/2"
#6	3.2	3-7/8"	1-3/16"	3/4"	15/16"	4	50	1/2"



Dimensions are basic for detailing purposes only. Screwlock projection heights vary with location on the rebar. Concrete cover is critical, orientate coupler to obtain dimension "B" shown above.

Note: Dimensions are subject to change without notice. An alternate design may be recommended for the above to suit the application or specification required.

To Order, Specify: quantity, type and rebar size.

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Concrete Forming Manual

WEIGHTS & MEASURES TO METRIC

LINEAR MEASURE			WEIGHT MEASURE		SQUARE MEASURE		CUBIC MEASURE								
1 Kilometer	= 0.6214	mile	1 Gram	= 0.03527	Ounce	1 Square Kilometer	= 0.3861	Square Miles = 247.1 Acres	1 Cubic Meter	= 35.314	Cubic Feet = 1.308	Cubic Yard			
1 Meter	= 3.2808	feet	1 Ounce	= 28.35	Grams	1 Hectare	= 2.471	Acres = 107,640	Square Feet	1 Cubic Meter	= 264.2	U.S. Gallons			
	= 1.0936	yard	1 Kilogram	= 2.2046	Pounds	1 Square Meter	= 10.764	Square Feet = 1.196	Square Yard	1 Cubic Centimeter	= 0.061	Cubic Inch			
	= 39.37	inches	1 Pound	= 0.4536	Kilogram	1 Square Centimeter	= 0.155	Square Inch	1 Liter (Cubic Decimeter)	= 0.0353	Cubic Foot = 61.023	Cubic Inches			
1 Centimeter	= 0.3937	inch	1 Metric Ton	= 0.984	English Ton	1 Square Millimeter	= 0.00155	Square Inch	1 Liter	= 0.2642	U.S. Gallons = 1.0567	U.S. Quart			
1 Millimeter	= 0.03937	inch	1 English Ton	= 1.016	Metric Ton	1 Square Mile	= 2.5899	Square Kilometers	1 Square Yard	= 0.7645	Cubic Meter	1 Cubic Foot	= 0.02832	Cubic Meter = 28.317	Liters
1 Mile	= 1.609	kilometer	WEIGHT MEASURE			1 Acre	= 0.4047	Hectare	1 Square Foot	= 0.0929	Square Meter = 929	Square Centimeters	1 Cubic Inch	= 16.38716	Cubic Centimeters
1 Yard	= 0.9144	meter	1 Kip	= 4.448	Kilonewtons	1 Square Yard	= 0.836	Square Meter	1 U.S. Gallon	= 3.785	Liters = .91598	Imperial Gallon	1 U.S. Quart	= 0.946	Liter
1 Foot	= 0.3048	meters	1 PSI	= .006895	N/mm ² or MPa	1 Square Foot	= 0.0929	Square Meter = 929							
1 Foot	= 304.8	millimeters				Square Centimeters									
1 Inch	= 2.54	centimeters				1 Square Inch	= 6.452	Square Centimeters = 645.2							
1 Inch	= 25.4	millimeters				Square Millimeters									

WEIGHTS OF ROUND, SQUARE & HEXAGONAL STEEL BARS

(based on a weight of 0.2833 lbs/cu. in. or 489.6 lbs / cu. ft.)

Thickness or Diameter (in)	ROUND BARS		SQUARE BARS		HEXAGONAL BARS		ASTM REINFORCED BARS		
	Wt., lbs / in.	Wt., lbs / ft.	Wt., lbs / in.	Wt., lbs / ft.	Wt., lbs / in.	Wt., lbs / ft.	Bar Number	Wt., lbs / in.	Wt., lbs / ft.
1/8	0.0035	0.0417	0.0044	0.0531	0.0038	0.0460			
1/4	0.0139	0.1669	0.0177	0.2125	0.0153	0.1840	2	0.0139	0.167
3/8	0.0313	0.3755	0.0398	0.4781	0.0345	0.4141	3	0.0313	0.376
1/2	0.0556	0.6676	0.0708	0.8500	0.0613	0.7361	4	0.0556	0.668
5/8	0.0869	1.043	0.1107	1.328	0.0958	1.150	5	0.0869	1.043
3/4	0.1252	1.502	0.1594	1.913	0.1380	1.656	6	0.1252	1.502
7/8	0.1704	2.044	0.2169	2.603	0.1879	2.254	7	0.1704	2.044
1	0.2225	2.670	0.2833	3.400	0.2454	2.944	8	0.2225	2.670
1 1/8	0.2816	3.380	0.3586	4.303	0.3106	3.727	9	0.2833	3.400
1 1/4	0.3477	4.172	0.4427	5.313	0.3834	4.601	10	0.3752	4.303
1 3/8	0.4207	5.049	0.5357	6.428	0.4639	5.567	11	0.4429	5.313
1 1/2	0.5007	6.008	0.6375	7.650	0.5521	6.625			
5/8	0.5876	7.051	0.7482	8.978	0.6479	7.775	14	0.6375	7.65
3/4	0.6815	8.178	0.8677	10.41	0.7515	9.018			
7/8	0.7823	9.388	0.9961	11.95	0.8626	10.35			
2	0.8901	10.68	1.133	13.60	0.9815	11.78			
1 1/8	1.005	12.06	1.279	15.35	1.108	13.30			
1 1/4	1.127	13.52	1.434	17.21	1.242	14.91	18	1.1333	13.60
1 3/8	1.255	15.06	1.598	19.18	1.384	16.61			
1 1/2	1.391	16.69	1.771	21.25	1.534	18.40			
5/8	1.533	18.40	1.952	23.43	1.691	20.29			
3/4	1.683	20.19	2.143	25.71	1.856	22.27			
7/8	1.839	22.07	2.342	28.10	2.028	24.34			

INCHES TO DECIMALS OF A FOOT

INCH	0	1	2	3	4	5	6	7	8	9	10	11
-	-	0.0833	0.1667	0.2500	0.3333	0.4167	0.5000	0.5833	0.6667	0.7500	0.8333	0.9167
1/32	0.0026	0.0859	0.1693	0.2526	0.3359	0.4193	0.5026	0.5859	0.6693	0.7526	0.8359	0.9193
1/16	0.0052	0.0885	0.1719	0.2552	0.3385	0.4219	0.5052	0.5885	0.6719	0.7552	0.8385	0.9219
3/32	0.0078	0.0911	0.1745	0.2578	0.3411	0.4245	0.5078	0.5911	0.6745	0.7578	0.8411	0.9245
1/8	0.0104	0.0938	0.1771	0.2604	0.3438	0.4271	0.5104	0.5938	0.6771	0.7604	0.8438	0.9271
5/32	0.0130	0.0964	0.1797	0.2630	0.3464	0.4297	0.5130	0.5964	0.6797	0.7630	0.8464	0.9297
3/16	0.0156	0.0990	0.1823	0.2656	0.3490	0.4323	0.5156	0.5990	0.6823	0.7656	0.8490	0.9323
7/32	0.0182	0.1016	0.1849	0.2682	0.3516	0.4349	0.5182	0.6016	0.6849	0.7682	0.8516	0.9349
1/4	0.0208	0.1042	0.1875	0.2708	0.3542	0.4375	0.5208	0.6042	0.6875	0.7708	0.8542	0.9375
9/32	0.0234	0.1068	0.1901	0.2734	0.3568	0.4401	0.5234	0.6068	0.6901	0.7734	0.8568	0.9401
5/16	0.0260	0.1094	0.1927	0.2760	0.3594	0.4427	0.5260	0.6094	0.6927	0.7760	0.8594	0.9427
11/32	0.0286	0.1120	0.1953	0.2786	0.3620	0.4453	0.5286	0.6120	0.6953	0.7786	0.8620	0.9453
3/8	0.0313	0.1146	0.1979	0.2813	0.3646	0.4479	0.5313	0.6146	0.6979	0.7813	0.8646	0.9479
13/32	0.0339	0.1172	0.2005	0.2839	0.3672	0.4505	0.5339	0.6172	0.7005	0.7839	0.8672	0.9505
7/16	0.0365	0.1198	0.2031	0.2865	0.3698	0.4531	0.5365	0.6198	0.7031	0.7865	0.8698	0.9531
15/32	0.0391	0.1224	0.2057	0.2891	0.3724	0.4557	0.5391	0.6224	0.7057	0.7891	0.8724	0.9557
1/2	0.0417	0.1250	0.2083	0.2917	0.3750	0.4583	0.5417	0.6250	0.7083	0.7917	0.8750	0.9583
17/32	0.0443	0.1276	0.2109	0.2943	0.3776	0.4609	0.5443	0.6276	0.7109	0.7943	0.8776	0.9609
9/16	0.0469	0.1302	0.2135	0.2969	0.3802	0.4635	0.5469	0.6302	0.7135	0.7969	0.8802	0.9635
19/32	0.0495	0.1328	0.2161	0.2995	0.3828	0.4661	0.5495	0.6328	0.7161	0.7995	0.8828	0.9661
5/8	0.0521	0.1354	0.2188	0.3021	0.3854	0.4688	0.5521	0.6354	0.7188	0.8021	0.8854	0.9688
21/32	0.0547	0.1380	0.2214	0.3047	0.3880	0.4714	0.5547	0.6380	0.7214	0.8047	0.8880	0.9714
11/16	0.0573	0.1406	0.2240	0.3073	0.3906	0.4740	0.5573	0.6406	0.7240	0.8073	0.8906	0.9740
23/32	0.0599	0.1432	0.2266	0.3099	0.3932	0.4766	0.5599	0.6432	0.7266	0.8099	0.8932	0.9766
3/4	0.0625	0.1458	0.2292	0.3125	0.3958	0.4792	0.5625	0.6458	0.7292	0.8125	0.8958	0.9792
25/32	0.0651	0.1484	0.2318	0.3151	0.3984	0.4818	0.5651	0.6484	0.7318	0.8151	0.8984	0.9818
13/16	0.0677	0.1510	0.2344	0.3177	0.4010	0.4844	0.5677	0.6510	0.7344	0.8177	0.9010	0.9844
27/32	0.0703	0.1536	0.2370	0.3203	0.4036	0.4870	0.5703	0.6536	0.7370	0.8203	0.9036	0.9870
7/8	0.0729	0.1563	0.2396	0.3229	0.4062	0.4896	0.5729	0.6563	0.7396	0.8229	0.9063	0.9896
29/32	0.0755	0.1589	0.2422	0.3255	0.4089	0.4922	0.5755	0.6589	0.7422	0.8255	0.9089	0.9922
15/16	0.0781	0.1615	0.2448	0.3281	0.4115	0.4948	0.5781	0.6615	0.7448	0.8281	0.9115	0.9948
31/32	0.0807	0.1641	0.2474	0.3307	0.4141	0.4974	0.5807	0.6641	0.7474	0.8307	0.9141	0.9974

NOTES

A large grid area for taking notes, consisting of a 30x30 grid of small squares. The grid is empty and occupies most of the page below the 'NOTES' header.

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