



**DECKFAST™
SHORING SYSTEM**

CONCRETE
CONSTRUCTION
SOLUTIONS

APPLICATION GUIDE

**THE
POWER
OF RED™**



A WORD ABOUT SAFETY

High productivity depends on safety; even a minor accident causes job delays and inefficiency, which run up costs. That's why Symons, in the design of its systems and products, makes the safety of those people who will be working with and near the equipment one of its primary concerns. Every product is designed with safety in mind, and is tested to be certain that it will perform as intended with appropriate safety allowances. Factory-built systems such as these provide predictable strength, minimizing the uncertainty that often surrounds "hand-made," "job-shop" and "job-built" equipment.

As a result, Symons products are your best assurance of a safe operation when used properly. To insure proper use, we have published this application guide. We recommend that all construction personnel who will be involved, directly or indirectly, with the use of this product be familiar with the contents of this guide.

As a concerned participant in the construction industry, Symons also recommends that regular safety meetings be held prior to starting the forming operation, and regularly throughout the concrete placement, form stripping and erection operations. Symons personnel will be happy to assist in these meetings with discussion of safe use of the equipment, slide presentations and other formal safety information provided by such organizations as the Scaffolding, Shoring and Forming Institute.

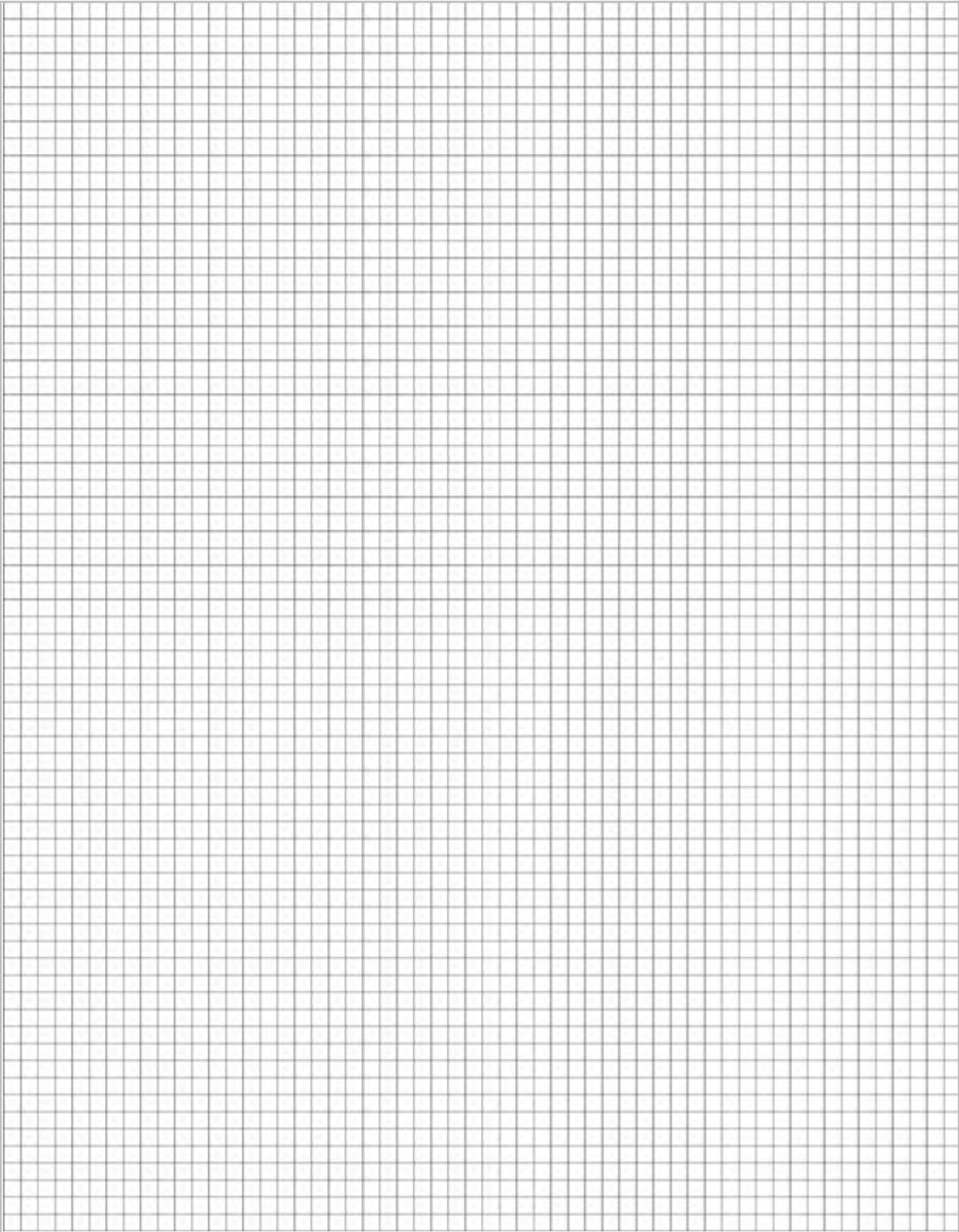
In addition to the above meetings, all persons involved with the construction should be familiar and in compliance with applicable governmental regulations, codes and ordinances, as well as the industry safety standards

Because field conditions vary and are beyond the knowledge and control of Symons, safe and proper use of this product is the responsibility of the user.

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Notes and Sketches



I. Product Features

DeckFast™ is a modular slab formwork system that is used for commercial and industrial applications. The system will support slabs up to 22" and heights up to 19' above the floor or ground (see capacities chart, page 7).

The basic DeckFast system consists of tubular post shores that are adjustable to 18', bearing supports and modular forming panels. The uniqueness of this system lies with bearing supports that capture and support corner clusters of four panels. When the bearing supports are fastened to flat top post shores, the panels and post shores can be erected individually from below, simplifying the erection process.

The easy-to-use DeckFast system, with two basic components and two support rods, can be erected with a minimal amount of training. Even workers who are not familiar with the system can achieve efficiencies of an average of 1000 ft² per worker per day for most flat slab conditions.

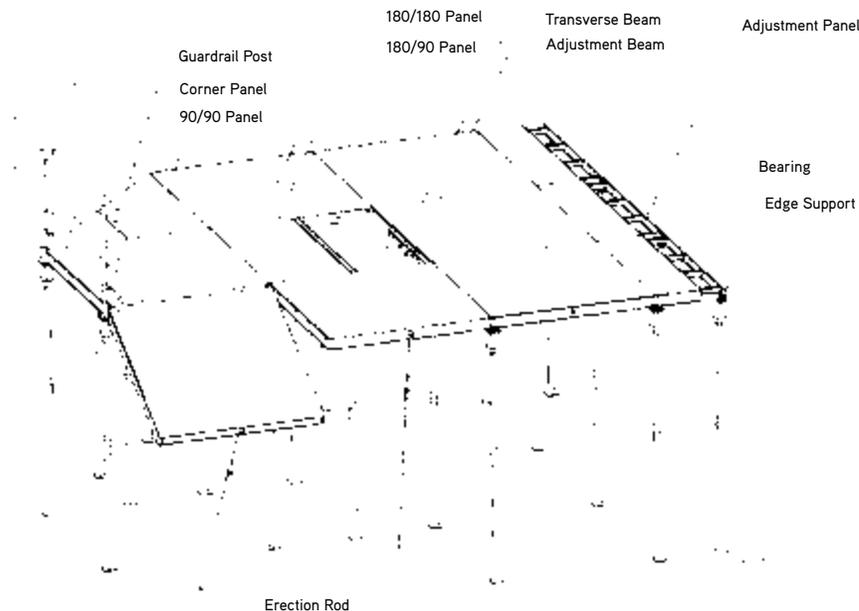
Even infill sections can be easily formed and economically installed using DeckFast components.

Forming panels are made from 5-ply bonded veneers with 10 mm or 10.5 mm plywood. Edges are protected by specially designed aluminum framing members that not only minimize the gap between panels but also add to panel strength. Aluminum frames minimize maintenance cleaning efforts and reduce cleanup costs.

Standard DeckFast Panel size is 180 cm x 180 cm (5.9' x 5.9', 34.9 ft²) but weighs only about 104 lbs. Other sizes are also available to fit your needs.

Metric to U.S. (Imperial) Conversions

Metric Dim. (cm)	U.S. Dim. (in.)	Nearest 1/8"
5	1.97	2
10	3.94	4
15	5.91	5 7/8
20	7.87	7 1/8
30	11.81	11 3/4
45	17.72	17 3/4
50	19.69	19 3/4
55	21.65	21 5/8
60	23.62	23 5/8
65	25.59	25 5/8
70	27.56	27 1/2
75	29.53	29 1/2
80	31.50	31 1/2
90	35.43	35 5/8
100	39.37	39 3/8
120	47.24	47 1/4
150	59.06	59
180	70.87	70 7/8
200	78.74	78 3/4
240	94.49	94 1/2
270	106.30	106 1/4
300	118.11	118 1/8



Typical application

II. Components

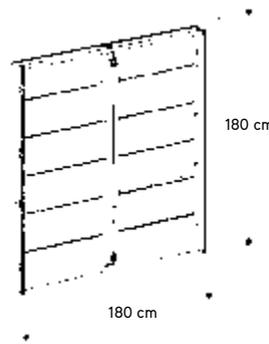
The basic components required for shoring standard slab areas are the Panels and the Post Shores with Bearings to support the panels. See page 20 for Product Codes and weights for components.

A. Basic Components

Panel

Panel frames are lightweight aluminum. Sizes include:

- 180 x 180 cm* (6' x 6' nominal)
- 180 x 90 cm* (6' x 3' nominal)
- 180 x 75 cm* (6' x 2'-6" nominal)
- 180 x 60 cm* (6' x 2' nominal)
- 180 x 45 cm* (6' x 1'-6" nominal)

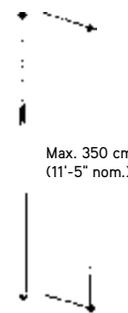


180 x 180 Panel

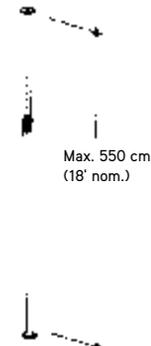
Post Shore

350 and 550 Post Shores are completely galvanized inside and out including external threads.

- 350: L = 6'-6" to 11'-5" nominal
- 550: L = 10'-1" to 18' nominal
- Inner tube diameter: 2.45" nominal
- Outer tube diameter: 3" nominal



350 Post Shore



550 Post Shore

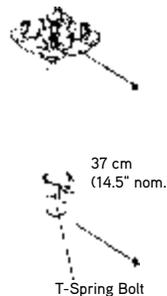
All shores are complete with quick-release pins. One tap with the hammer is usually enough to release the shore from its load.

Bearing

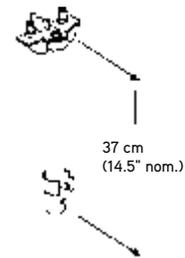
The support for the DeckFast Panels is inserted into the steel shore and secured with a T-Spring Bolt or Bearing Retainer.

Edge Support Bearing

It is inserted into the shore like the DeckFast Bearing. The Edge Support facilitates flush connections of the DeckFast Panels along side walls.



Bearing



Edge Support Bearing

B. Assembly Aids

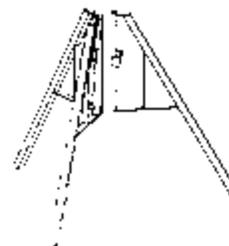
Post Shore Tripod

The Post Shore Tripod is designed for steadying the 350 and 550 Post Shores during erection procedures (maximum 3" diameter post).

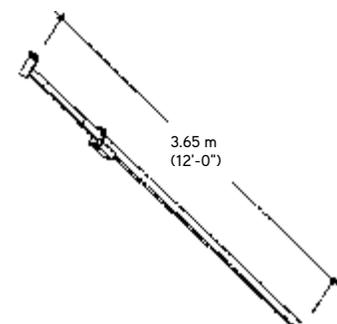
The Hinged design accommodates all angular patterns, such as 90°, 180° and 360°.

DF Erection Rod

Facilitates the erection and disassembly of the DeckFast Panels. For ceiling heights up to 3.65 m (12'-0" nominal). Adjustable in steps of 5 cm (2").



Post shore tripod



DF Aluminum Erection Rod

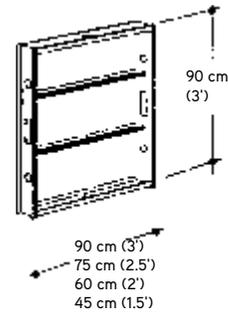
C. Additional Components

Handset infill areas can be easily and economically formed by utilizing special component pieces.

90 cm Panel

90 cm (3' nom.) panels are available in widths to accommodate small areas.

- Panel 90/90 (3' x 3')
- Panel 90/75 (3' x 2'-6"')
- Panel 90/60 (3' x 2')
- Panel 90/45 (3' x 1'-6"')



Panels

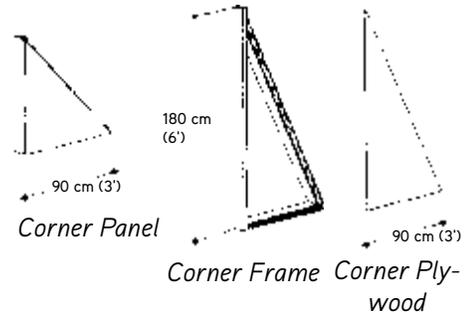
Triangular DeckFast Panel

The Triangular DeckFast Panels are used for infill purposes in irregularly shaped handset areas. The Corner Panel 90 x 90 cm (3' x 3') is produced with plywood.

Corner Frame

The Corner Frame 180 x 90 cm (6' x 3') is reusable and is covered with the separate 180 x 90 cm (6' x 3') corner plywood. Corner frame and plywood are reversible for either a left-hand or a right-hand application.

- Corner Frame 180 x 90 cm (6' x 3')
- Corner Panel 90 x 90 cm (3' x 3')
- Corner Plywood 180 x 90 cm (6' x 3')

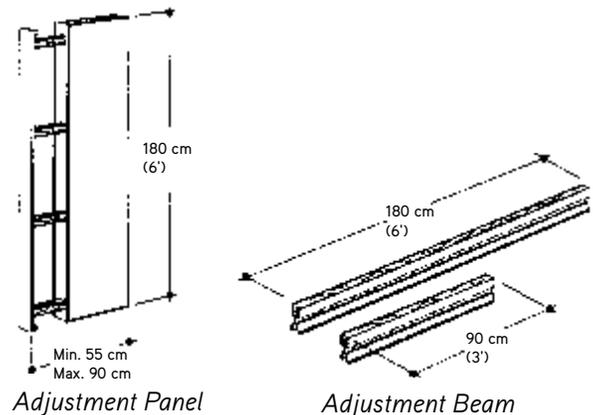


Adjustment Panel 90 x 180 cm (3'x6' nom.)

Uniform panel widths between 55 and 90 cm (21¹¹/₁₆" and 35⁷/₁₆"") can be adjusted. Filler plywood (3/4" thick), is cut to size and inserted. Wood components, integrated in the telescopic arms, are provided for nailing.

Adjustment Beams 180 cm (6' nom.) and 90 cm (3' nom.)

The Aluminum beams with integrated nailing strips are placed on the DeckFast Bearing or Edge Support Bearing to support a 3/4" plywood filler (pages 12, 14).

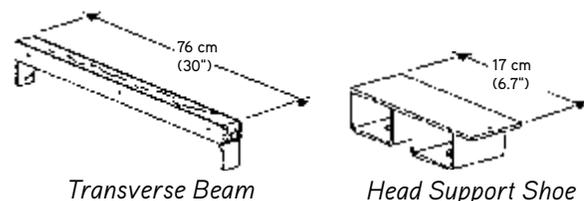


Transverse Beam

Supported by the aluminum Adjustment Beams, the Transverse Beams span across a 90 cm (3' nom.) opening to provide additional support for a 3/4" plywood filler (pages 12-14).

Head Support Shoe

It is placed on the DeckFast Bearing or Edge Support Bearing and serves as a support device for 4x4s and 3/4" plywood in fill-in areas (page 12).



550 Post Shore Sleeve

Adapts to the wider opening of the inner tubes of the 550 Post Shore and reduces the diameter for inserting the DeckFast Bearing or Edge Support.



550 Post Shore Support Sleeve

T-Spring Bolt

Affixes and secures the DeckFast Bearing and Edge Support.



T-Spring Bolt

Head Support Sleeve

Bolts to the base of a 550 Post Shore in order to accept the Bearing when the shore is used upside-down.

Post Shore Release Pin

Releases the load from the shores with a hammer blow.



Head Support Sleeve



Post Shore Release Pin

D. Guardrail Components

Guardrail Post

Provides fall protection safety. Inserts into the Guardrail Bearing.

Guardrail Bracket

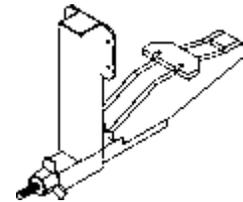
For attaching Guardrail Posts directly to the Panels.

Toeboard Clip

Attaches toeboards to guardrails.



Guardrail Post



Guardrail Bracket

E. Bracing Components

Bracing Frame 180

Provides additional stability to DeckFast at start-up or when additional deck stability is needed.

Tie Down Frame

Bracing frame used to transfer loads in cantilever application.

Tie Down Hook & Handle

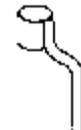
Used to tie down cantilevered DeckFast Panels to the Tie Down Frame.

1.9" x 3.0" Swivel Clamp

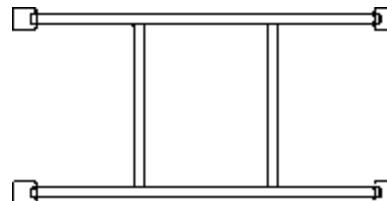
Attaches additional bracing to 350 and 550 Post Shores.

1.69" x 1.9" Swivel Clamp

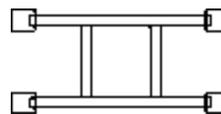
Connects Tie Down Handles to Tie Down Frames.



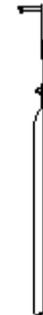
Toeboard Clip



Bracing Frame 180



Tie Down Frame



Tie Down Hook and Handle



Swivel Clamps

III. Planning and Assembly Preparations

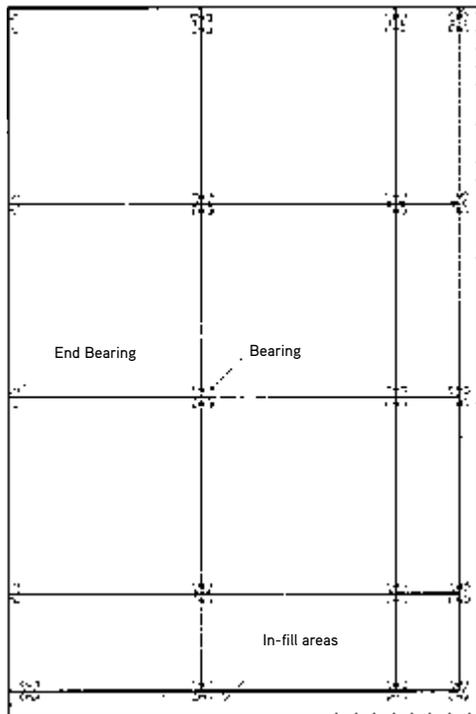
A. Planning

Preplanning the job is important to increase job efficiency and to reduce the number of components needed. The removal and cleaning of formwork is simplified by spraying the panels thoroughly with a concrete release agent.

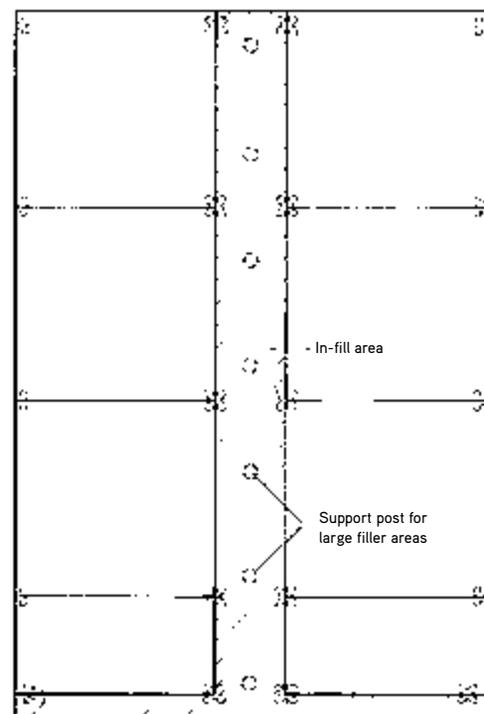
Use a plan layout to determine the number of panels needed. If a starting point is indicated on the plan, it is important to begin at this point to avoid misallocation of material.

Standard panel sizes may not always fit well or may not fit between columns. With the DeckFast system, these obstacles can be overcome using infills. Infills are formed by cutting filler plywood to size and supporting them by means of adjustment beams, DeckFast Transverse Beams or 4 x 4 lumber and head support shoes in conjunction with DeckFast Bearings or additional post shores as shown.

The DeckFast Bearings are made to support the corners of the four panels, however they may also be used to support the heavy siderail edge of a panel. When the panel is against a wall, edge supports may be used to support the panels.



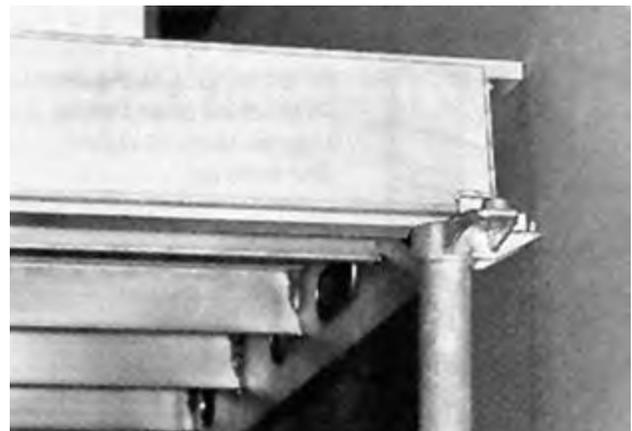
Typical arrangement with infills along walls



Typical arrangement with centered infill strip



Front-end wall connection with Bearing



Connection with edge support along wall

An alternate method for closing widths of $21\frac{1}{16}$ ' to $35\frac{7}{16}$ ' is to use a 90/180 Adjustment Panel. The panel is adjusted to the gap and $\frac{3}{4}$ ' plywood is cut to size, and dropped in place. The adjustment bars have wood inserts for nailing.



Adjustment Panel

B. Erection Preparations

1. Adjust the length extension of all post shores. Refer to the following tables to select the proper post shore. Determine the post shore extended length by subtracting measurement "a" from the required clear ceiling height (see drawing, below).

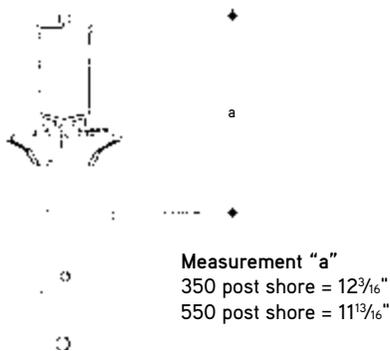
Example:

Clear Ceiling Height = 9'-2"

350 DB Post Shore was selected for use.

Extended Post Shore Length:

$$9'-2" \text{ minus } 12\frac{3}{16}" = 8'-1\frac{13}{16}"$$



Determining post shore extended length

TIP: Some users find that a simple template makes height adjustment of posts easy.

2. Insert the DeckFast Bearing or Edge Supports into the post shore top tubes. Align the *bottom hole* of the DeckFast Bearing tube or Edge Support tube with the *top* post shore hole when using the 350 Post Shore. Use the *second* hole of the Post Staff when using the 550 Post Shore.
3. Push the DeckFast Spring Bolts into the post shore tube hole to fasten the assembly. This assembly remains connected during the entire forming operation.

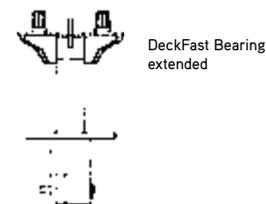
C. Technical Data

The following DeckFast Formwork and Post Shore capacities apply only to DeckFast systems that are laterally stabilized. This requires that the deck system be braced against walls, columns, or other existing supporting structures.

In the following chart:

1. The *Clear Height* (clear ceiling height) listed is measured from the bottom of the slab being supported to the top of the slab below.
2. Unless otherwise noted, deflection is limited to $L/360$.
3. The minimum clear height (with Bearing fully inserted) for the post shores used are: 7'-2" for the 350 Post Shore and 11'-2" for the 550 Post Shore. (*Note:* For 350 PS, for heights from 7'-2" to 7'-8", the bearing must be pinned with the Quick Release Load Pin instead of a T-Spring Bolt)
4. Chart assumes that the DeckFast Bearing is fully extended. Subtract 5' from the 350 dimension and 4½' from the 550 dimension when the DeckFast Bearing is fully inserted.
5. Add sill dimension to maximum heights when sills are used.

NOTE: 550 Post Shores require the 550 Post Shore Sleeve.



Bearing connection detail

DeckFast™ Post Shore and Panel Capacities

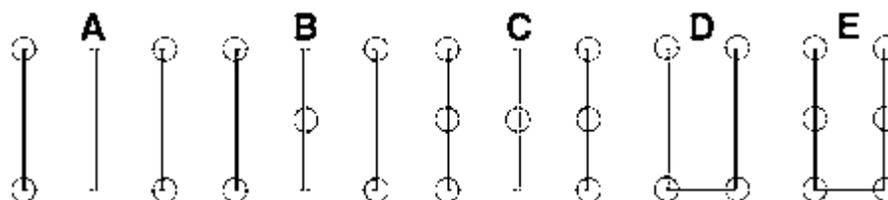
Slab Thickness (Notes)	Maximum Clear Height	Post Shore Type	Post Shore Pattern	
180 x 180 Panel				
5"	12'-6"	350	A	
	17'-8"	550	A	
	19'-0"	550	B	
6"	12'-6"	350	A	
	16'-11"	550	A	
	19'-0"	550	B	
8"	12'-2"	350	A	
	15'-6"	550	A	
	18'-4"	550	B	
	19'-0"	550	C	
9"	11'-10"	350	A	
	15'-2"	550	A	
	17'-8"	550	B	
9"	19'-0"	550	C	
	10"	11'-7"	350	A
		14'-9"	550	A
17'-0"		550	B	
19'-0"		550	C	
10.9"	#3 11'-4"	350	A	
	#3 14'-4"	550	A	
11"	#1 11'-4"	350	A	
	#1 14'-4"	550	A	
	16'-7"	550	B	
	19'-0"	550	C	
11.6"	#1,2 11'-1"	350	A	
	#1,2 14'-1"	550	A	
12"	12'-6"	350	B	
	16'-3"	550	B	
	19'-0"	550	C	
13"	12'-6"	350	B	
	15'-10"	550	B	
	19'-0"	550	C	
14"	12'-6"	350	B	
	15'-5"	550	B	
	19'-0"	550	C	
14.75" max. load	12'-6"	350	B	
	15'-1"	550	B	
	19'-0"	550	C	

Slab Thickness (Notes)	Maximum Clear Height	Post Shore Type	Post Shore Pattern
90 x 180 Panel			
Up to 11"	12'-6"	350	D
	19'-0"	550	D
12"	12'-6"	350	D
	18'-6"	550	D
	19'-0"	550	E
13"	12'-6"	350	D
	18'-1"	550	D
	19'-0"	550	E
14"	12'-6"	350	D
	17'-6"	550	D
	19'-0"	550	E
14.5"	#3 12'-6"	350	D
	#3 17'-4"	550	D
15.2"	#1,4 12'-6"	350	D
	#1,4 19'-0"	550	E
75 x 180 Panel			
Up to 17.75"	12'-6"	350	D
	17'-8"	550	D
60 x 180 Panel			
Up to 22"	12'-6"	350	D
	18'-0"	550	D
45 x 180 Panel			
Up to 22"	12'-6"	350	D
	19'-0"	550	D

Notes:

1. Shaded areas indicate that the slab thickness is allowable, but exceeds L/360 deflection.
2. Maximum allowable load on 180 x 180 Panel supported at the corners.
3. Maximum allowable load meeting L/360 deflection criteria
4. Maximum allowable load on a 90 x 180 panel supported at corners or at mid-span.

Post Shore Support Patterns



IV. Erection of Formwork

A. Panel Sequence

The first panel must be secured against the structure to ensure a stable starting point. This can be achieved with lumber cleats or brace frames.



Panels may also be tied to rebar along the wall until the system is stabilized against the structure.

There are three basic erection methods used:

- Low ceiling heights - forming erection from **underneath**
- High ceiling heights - forming erection from **below with rolling scaffolds**
- High ceiling heights - forming erection from the **deck**

The method selected depends upon the clear ceiling height to be shored and the availability and type of placing equipment.

Generally, with low room heights, panels are placed from underneath while standing on the slab. This is the most common and most productive method of placement (photos pages 8 and 9).

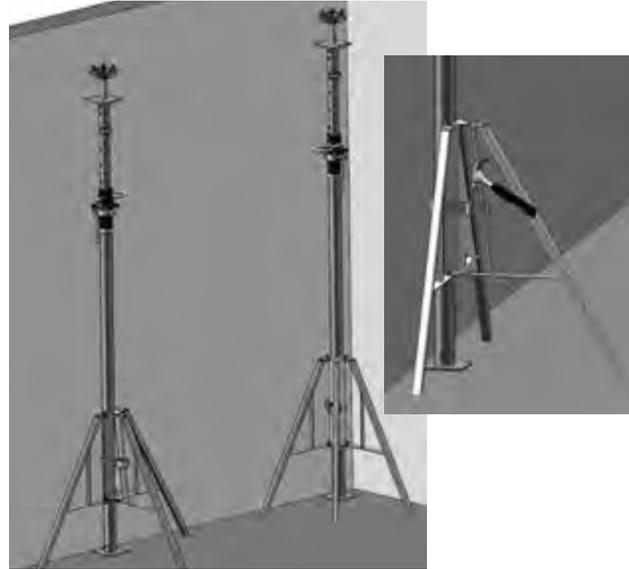
As room heights approach 10' it is usually more practical to place panels from a rolling scaffold or above, from the deck .

Three person crews are best with 180 x 180 cm panels. Two people are required to raise and hook the panel. Tripods are used to start 180 x 180 cm panels.

IMPORTANT: Before leveling posts *be sure the release pin is fully engaged* (see Section VI, Dismantling the Formwork).

B. Forming Example #1 - Low Ceiling

Typical procedures for setting forms from below:



1. Set up a DeckFast Bearing Support and an Edge Support in a corner of a room and plumb with a Tripod. Lock the tubular steel shore to the Tripod sliding hook.



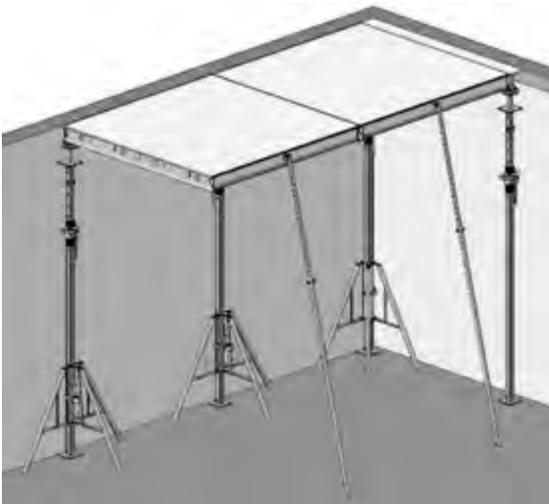
2. Hang the panel as shown. Make sure that the panel is hooked by the cams of both bearing devices. Hanging the panel requires two workers.



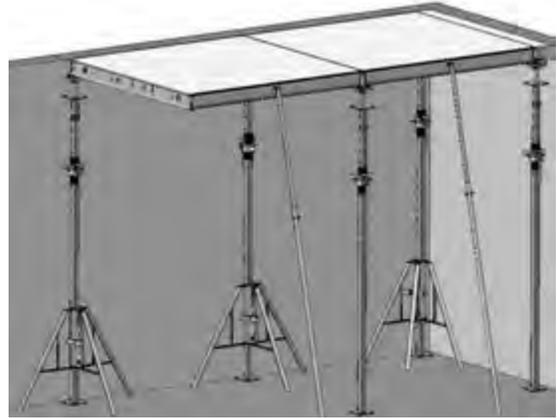
3. Swing the panel up with the DF Erection Rod and rotate it on the DeckFast Bearing until it rests firmly against the wall.



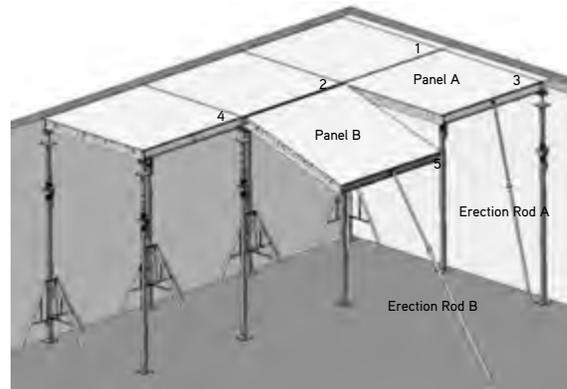
4. Put the Edge Support into position beneath the panel as shown, and plumb post shore.



5. Raise the second panel the same as the first panel, and let it rest on a second Erection Rod.



6. Put the DeckFast Bearing Support into position under the panels as shown, and plumb the post shore. The first Erection Rod can be removed for use on subsequent panels.



7. Repeat erection procedure to fill deck area.

Formwork Erection Sequence:

Panel A rests on Erection Rod A and the DeckFast Bearing Supports 1, 2 and 3 as Panel B is being set on Bearing Supports 2 and 4. Once Panel B swings into position with Erection Rod B, Bearing Support 5 is placed and Erection Rod A can be removed.



Typical crew is three workers.

C. Forming Example #2 - High Ceiling Forming with Placement from Below

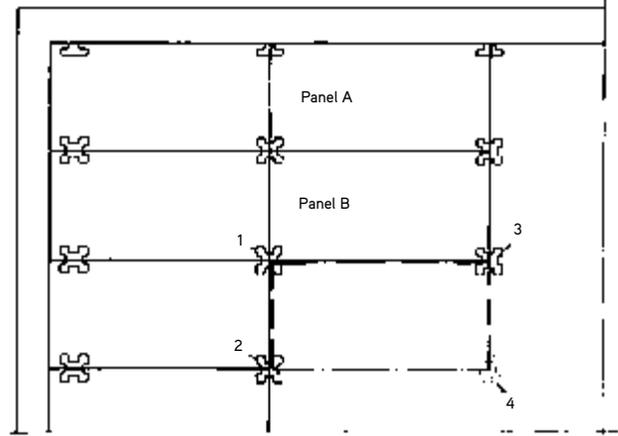
When setting panels in this manner, the DF Erection Rod is not needed. With this method, it is advantageous to stand on a ladder or rolling tower scaffold erected tall enough to reach the panel height, insert the panels and lead the DeckFast Bearing into place as a co-worker sets the post shore base. Rolling scaffolding must be erected in accordance with all applicable state and federal OSHA regulations, local codes and manufacturer's instructions.



1. Insert panels into the DeckFast Bearing Supports from above the bearing supports.



2. Support panel with the Bearing Support as shown.
3. The panel is now supported at all four corners.



Formwork Erection Sequence:

Panel A is already supported at all four corners with DeckFast Bearing Supports. Place Panel B Bearing Supports 1, 2 and 3. Once Panel B is in position, Bearing Support 4 is placed.

Note: If Bearing Bolts have been installed, panels may only be rotated into position from a scaffold, below.

D. Forming Example #3 - High Ceiling Forming with Placement from the Deck

Caution: Workers must use appropriate fall protection when placing panels from the deck.



1. After several rows of panels have been placed and the deck is stable, stacks of up to 5 panels may be placed on the deck assembly.

Important: Deck must be laterally stable before stacking panels.

2. Slide a panel so that the underside of the panel frame is slightly over the edge and exposed to the area below.
3. While supporting the overhanging panel from below with a DeckFast Erection Rod or by hand from a scaffold, slide the panel forward into position.



4. As the cantilevered panel reaches full length, lift the front end to capture the previously installed post supporting the adjacent panel and seat the rear corners properly in the rear post bearings.
5. Guide a post into the unsupported corner, assuring the panel frame seats properly within the bearing grooves.
6. Repeat to fill out the deck.

V. Fill-In Areas

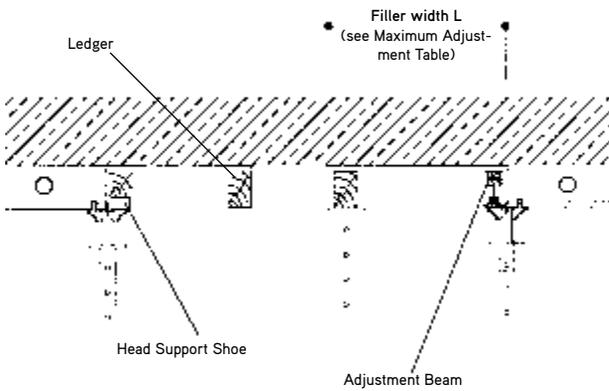
A. Adjustment Beams or Head Support Shoes

The DeckFast Slab Formwork can be adapted to the dimensions of the building in 6' steps using the different panel widths. Cut-up areas can easily be formed with standard DeckFast components and 3/4" plywood cut to size at the job site.

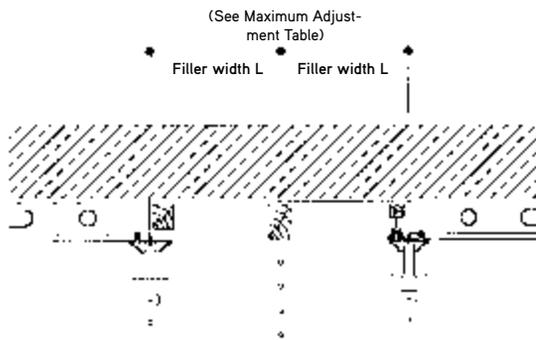
Two ways to adapt DeckFast Panels are:

- With the Head Support Shoe which is placed on the DeckFast Bearing and is used to support 4 x 4 timber and a 3/4" plywood infill section.
- With the aluminum Adjustment Beam with integrated nailing strip. The aluminum Adjustment Beam is positioned on the DeckFast Bearing and directly supports a 3/4" plywood infill section.

Use either the Adjustment Beam or the Head Support Shoe with a 4x4 (supplied by contractor).



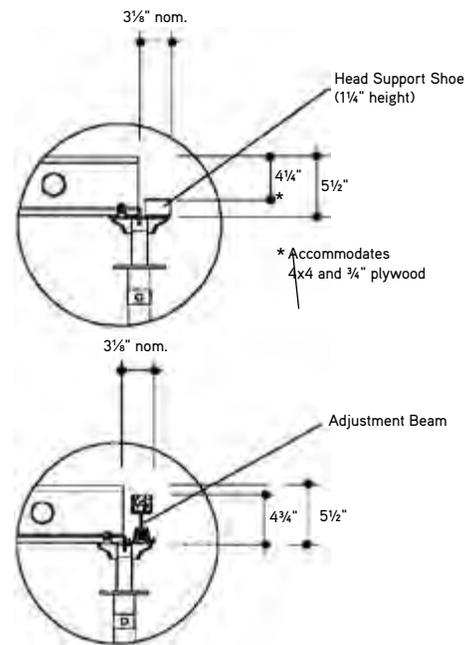
Fillers along walls and columns



Fillers between DeckFast panels

Maximum Adjustment 3/4" Class 1 BB plyform with outside grain running perpendicular to supports			
Slab Thickness "T"	4" - 6"	7" - 12"	13" - 14"
Maximum Span "L"	24"	20"	16"

L= Adjustment width without intermediate support. Larger filler widths can be attained by providing additional intermediate supports.



Masonry Walls

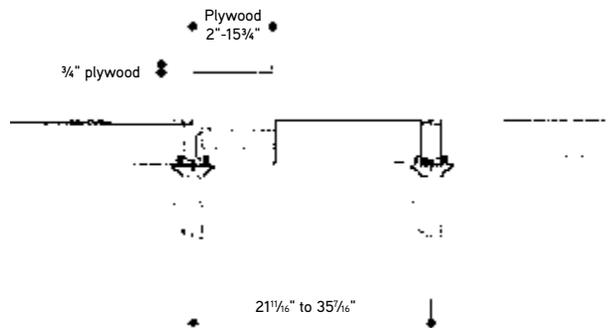
In commercial construction, the finished masonry wall dimensions are occasionally short by 1/2" to 3/4". The DeckFast system can be used to cast the floor at the required height by utilizing the Head Support Shoe with lumber installed on the Bearing.



The edge of the lumber serves as both a wall form and a ceiling edge form

B. Adjustment Panels 90/180

Adjustment Panels telescope to quickly accommodate various widths in handset areas. The width of the panel adjusts from 55 cm to 90 cm (21¹¹/₁₆" to 35⁷/₁₆" nom.). Simply cut a plywood strip to size and drop in place. Nailer strips are provided for fastening.



Typical Adjustment Panel application

One Adjustment Panel can replace:

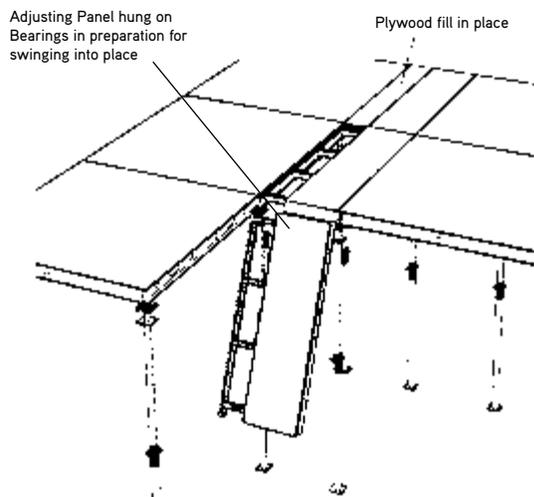
- One DeckFast Panel
- Adjustment Beams
- DeckFast Bearing Supports



No intermediate supports are required.

Dismantling of the Adjustment Panel 90/180 cm is performed in the same manner as standard DeckFast panels.

Tip: Some users find that Adjustment Panels are easier to handle if plywood is attached before lifting into position.



Erection of Adjusting Panel

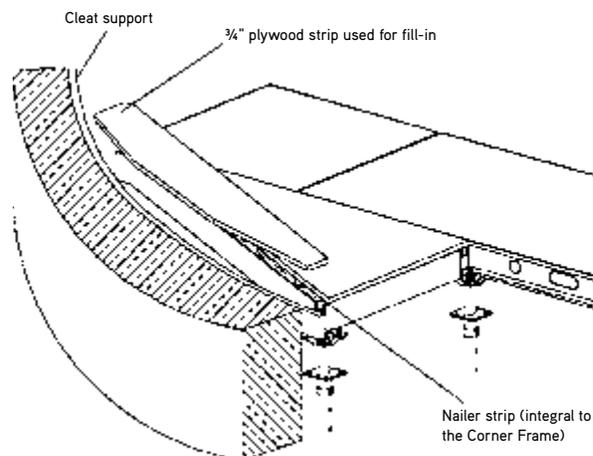
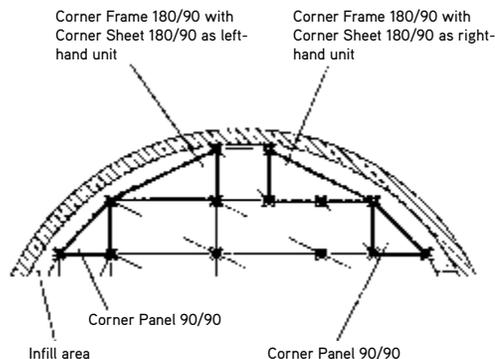
C. Triangular Panels

Cut-up forming areas of complicated floor plans can be reduced by using Corner Panels 90 x 90 cm (3' x 3' nom.) and Corner Frames 180 x 90 cm (6' x 3' nom.) with Corner Sheets 180/90 cm.

The *Corner Panel 90 x 90 cm* consists of the aluminum frame and the plywood sheet.

Plywood is *not* included on the Corner Frames 180 x 90 cm — pre-cut 3/4" plywood is ordered separately. The Corner Frames are reversible so that plywood can be mounted onto the Corner Frame on either side providing right-hand or left-hand triangular panels.

Corner Frames and Corner Panels are placed on the DeckFast Bearings as the other DeckFast Panels. An additional support is not required. The diagonally arranged edge profiles of the Corner Panels and Corner Frames are equipped with nailer strips for supporting and securing the 3/4" plywood filler.



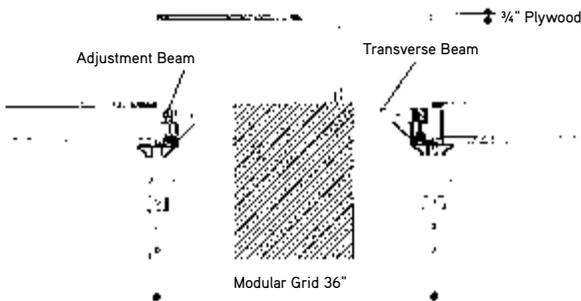
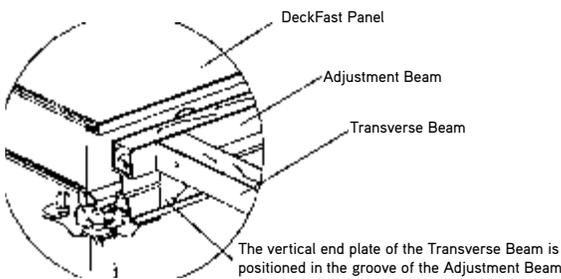
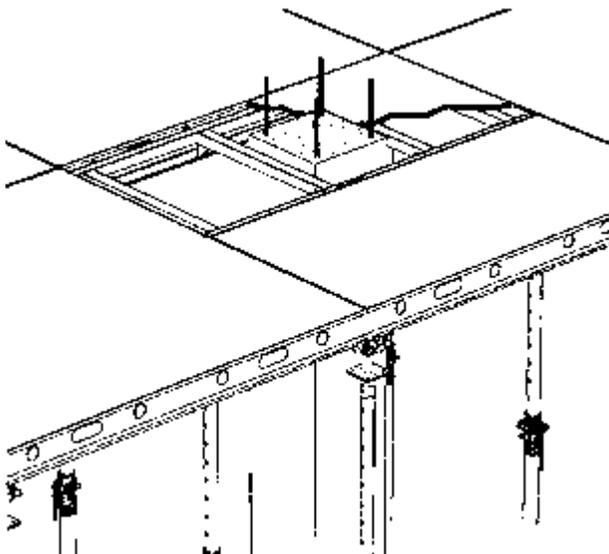
D. DeckFast™ Transverse Beams

The Transverse Beam is used for fill areas within the modular grid of the DeckFast Panels.

Fill areas occur when concrete columns penetrate into the slab formwork. In place of a panel, two Adjustment Beams and several Transverse Beams are installed.

The number of Transverse Beams required is determined by the concrete thickness and allowable plywood span. (See "Maximum Adjustment" table, page 12.)

Both the Transverse Beam and the Adjustment Beam are provided with nailer strips. The 3/4" plywood, cut-to-size, can be attached easily.



Adjustment Beams and Transverse Beams ready for plywood installation



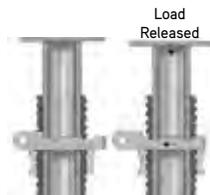
Fill area with Adjustment Beams and Transverse Beams installed

VI. Dismantling the Formwork

Caution: Care should be taken to secure the last row of posts during dismantling.

A. Typical procedures

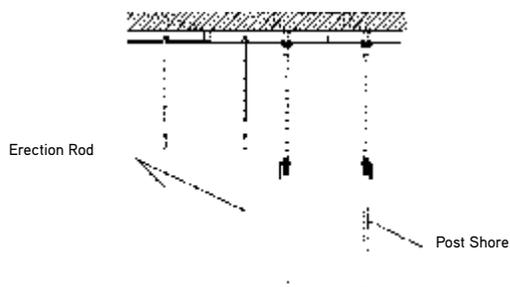
Dismantling should begin at filler area. Before attempting to remove a shore, release the load by striking the Release Pin and turning the screw down two full turns.



Before and after load release

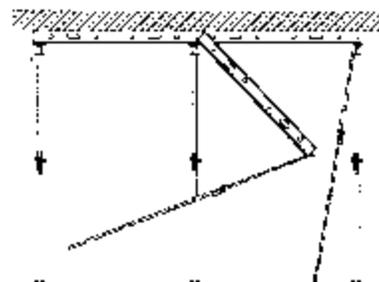
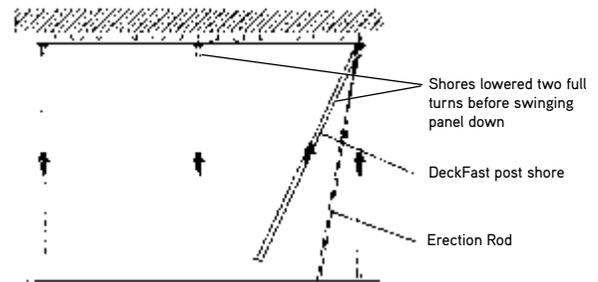
Temporarily support two adjacent DeckFast Panels next to the adjustment area with Erection Rods (see below) and lower all four shores under the panel to be stripped by turning the handle two full turns. The shore can then be swung out bottom first and removed.

Note: Do not strike the base of the post shores to remove them. This damages the post and results in charges assessed to the user.



Once the first two shores (one on each side of one of the Erection Rods) have been removed, the DeckFast Panel can be swung down using the Erection Rod and removed. Use a rolling tower when room heights approach 10' or more.

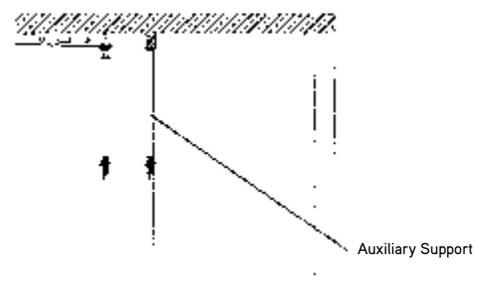
- Strike the release pin on the next post shore.
- Move the Erection Rod to the next panel.
- Lower the shore and remove it.
- Swing the panel down and remove.
- Repeat this sequence until all panels are removed.



TIP: If a panel is difficult to remove because it has adhered to the concrete, the Erection Rod may be used as a lever to help in removal. Use care so as not to damage the side rail of the panel.

B. Auxiliary Support

Curing time has to be considered when stripping the slab formwork. Remove panels and, if required, place Auxiliary Supports according to slab and job requirements.



C. High Bays

Stripping forms from heights exceeding 10 feet should be done with the aid of a scaffold. **Do not allow panels to fall and be damaged.**

D. Cleaning

Remove any concrete build-up from the form-face edges between pours. Spray panel faces and sides thoroughly with a quality Symons form release agent between pours.

VII. Slab Offsets (Staggered Levels)

The adaptation of the forming area in the offset region can be solved as shown below using timber and plywood from the job site.

Horizontal forces resulting from the slab offset have to be transmitted either via the slab plane into existing stable concrete walls and/or columns or by braces attached to the shoring system.

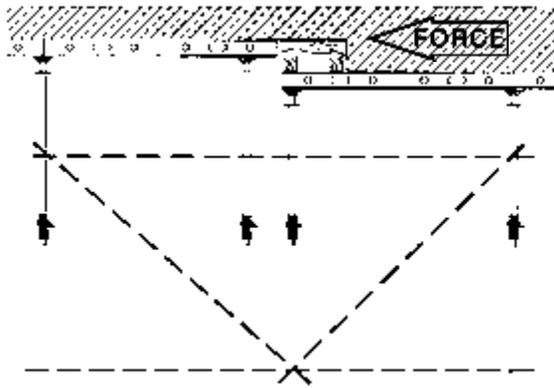
Braces installed either by means of bracing clamps and lumber or scaffold tubes with couplers.

Bracing Frame 180

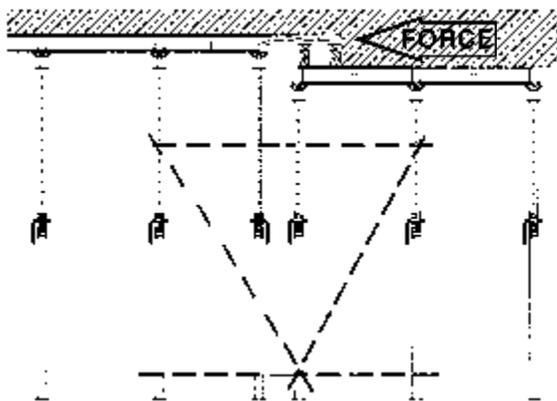
The Bracing Frame 180 provides additional DeckFast stability when existing lateral support from the structure is inadequate.

Bracing Frames provide a 180 cm spacing and attach quickly making them also useful as rigid starting Frames.

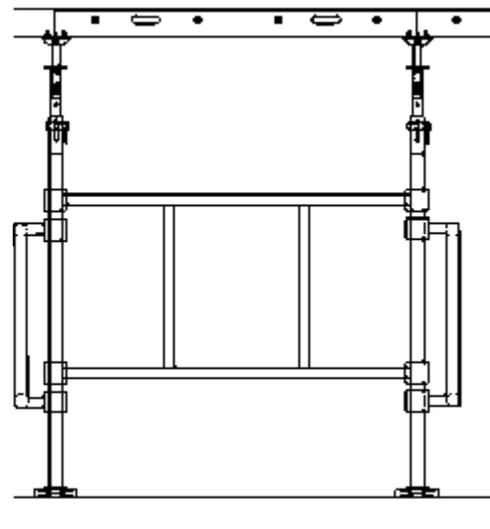
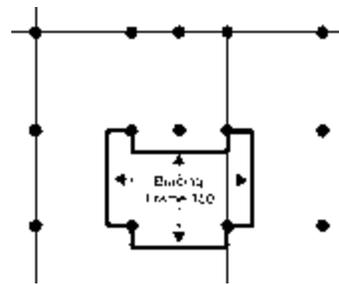
NOTE: Offset construction of the frame allows intermediate post placement to accommodate adjoining smaller panels.



Longitudinal direction of the DeckFast Panels



Transverse direction



Typical Bracing Frame arrangement.

VIII. Overhang/Cantilever Panels

All DeckFast 180 cm (6' nominal) Panels may be cantilevered up to 29' past the center of a supporting post to provide a walkway area for personnel to finish the slab.

A. Tie Down Requirements

All panels extending 6' or more past the center of the post shore must be tied down to prevent them from lifting off of the interior Post Bearing.

There are two recommended methods for tying down.

Method 1: Tie Down to Bracing Frames

This method requires a Bracing Frame 180 and the Cantilever Tie Down Frame with tie down hardware.

Assembly procedure:

1. Place last non-cantilevered panel on a supporting post at a minimum of 45' from the end of the slab.
2. Attach a Bracing Frame 180 to connect post A and post B.
3. Hang the panel, intended to be cantilevered, on post A and prop up with a DeckFast Erection Rod.
4. Place the Edge Post C at 42' from post A and allow the Panel to rest on the DeckFast Post Shore Bearing.
5. While continuing to hold the Edge Post C in place, attach the DeckFast Cantilever Tie Down Frame
6. Tighten all bolted clamps to 40 ft-lbs.
7. Tie cantilevered Panel to the Cantilevered Tie Down Frame using Tie Down Hook and Handle.

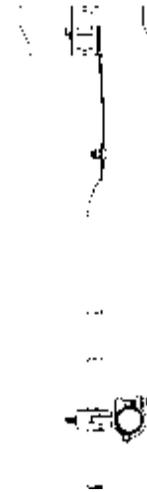
Tie Down Detail

Tie Downs Using Tie Down Hook and Handle:

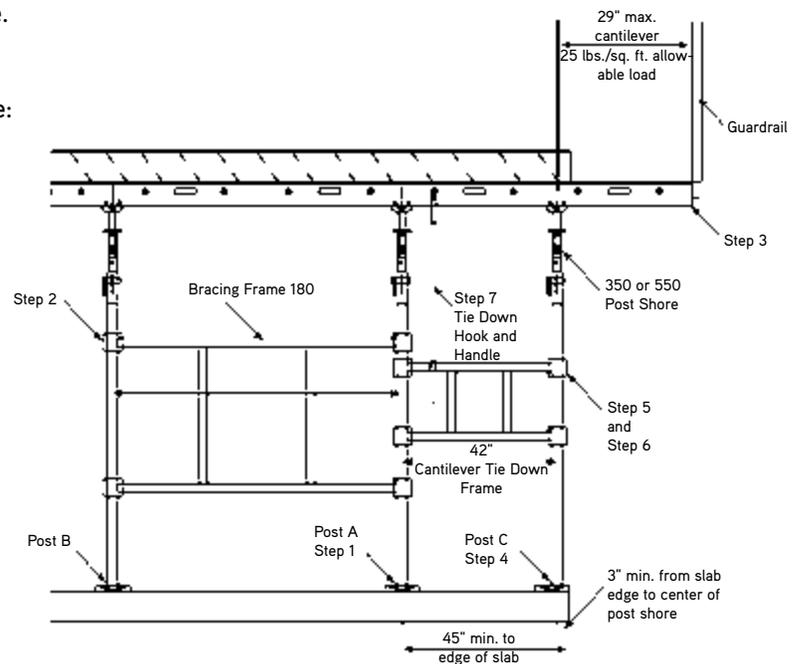
- Insert Tie Down Hook and Handle into the panel hole closest to the inboard post.
- Clamp Tie Down Hook and Handle to DeckFast Cantilever Tie Down Frame using Swivel Clamp.

Method 2: Direct Tie Down to Slab

This method requires anchors to be cast in the slab during concreting or drilled and placed after concreting.



Tie Down Detail



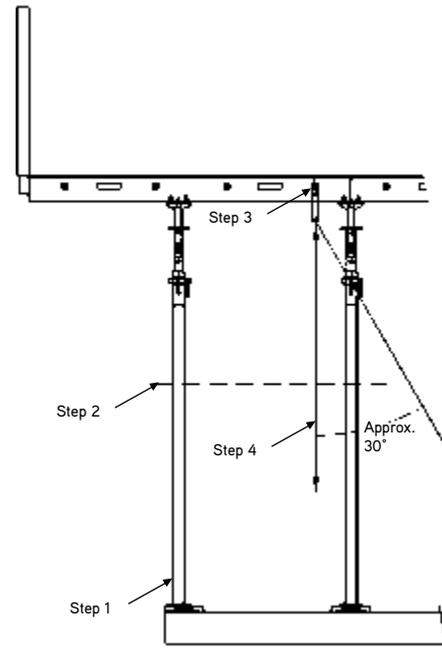
Method 1
Typical cantilevered application

Anchor capacity and spacing must be determined by Symons Technical Services.

1. Prop cantilevered Panel with post shore at slab edge.
2. Attach a horizontal stability member. Use lumber or tubing with appropriate clamps. (Or use the post shore/Panel Retainer on both sides of the Bearing on outer post shore.)
3. Insert Tie Down Hook into the Panel hole closest to the inboard post as shown.
4. Using wire rope ($\frac{1}{4}$ " min.) or chain connect to the Tie Down Hook and to anchor in floor. Take up all slack.

General Precautions

- All cantilevered panels must be tied down to the slab or to the DeckFast Cantilevered Frames when the amount of cantilever exceeds the center of the supporting post by 6'.
- DeckFast Cantilevered Frames must be connected only to Posts which are, in turn connected to interior Posts using the DeckFast Bracing Frame 180.
- Prior to personnel walking out on the cantilevered areas, ALL CANTILEVERED PANELS MUST BE INDIVIDUALLY INSPECTED TO INSURE PROPER INSTALLATION OF TIE DOWNS.
- Tie down methods for walkways are designed for 25 lbs. per square foot live load at a 4:1 safety factor for PERSONNEL LOADING ONLY. DO NOT PLACE CONSTRUCTION MATERIALS ON THE CANTILEVER.



Method 2
Typical direct tie down to slab procedure

Note: Anchors may be preset or the slab may be drilled and anchors inserted after the slab is set.

Refer to engineering drawings for specific anchor locations.

IX. Guardrails

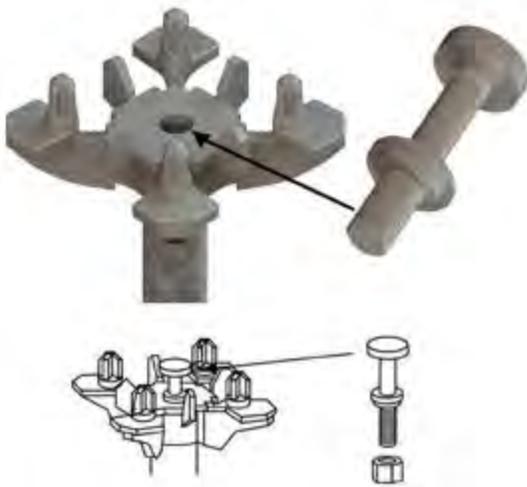
DeckFast Guardrail Bracket

May be clamped to DeckFast Panels along either edge. The bracket is placed prior to raising the panel into position. A nailing plate is provided for toeboard attachment.

CAUTION: Workers must use an alternate means of fall protection until the guardrail system is complete.



DeckFast Guardrail Bracket



DeckFast Panel Uplift

X. Wind Uplift

UPLIFT RESISTANCE

There are factors which may cause panel uplift, leading to additional measures being taken to resist this uplift. These factors include but are not limited to; certain structure geometries, regions where large wind speeds are expected, or specific requirements noted by the Engineer of Record (EOR). Particular attention should be paid to potential wind concentration areas, such as the building perimeter, or localized areas adjacent to cores or walls.

Key information to be considered for Uplift:

- 180/180 DeckFast Panels weigh approximately 14.5 kg/m² (3.0 lbs/sf)
 - Actual weights of individual DeckFast parts can be found in official Symons literature
- 1) If winds meet or exceed 64 km/hr (40 mph), the DeckFast Bearing Bolt (FSW450038) shall be installed at each Post Bearing.
 - 2) If additional resistance is required, the following options should be considered:
 - Place ballast on the erected panels
 - Methods noted below bring the system weight to approximately 23.50 kg/m² (4.8 Lbs/sf) by connecting the posts/bearings to the panels
 - Secure panels together and panels to the posts utilizing heavy-duty nylon cable ties rebar tie wire, or similar method
 - Posts can be anchored to the floor below for additional resistance
 - 3) In extreme cases, as directed by the EOR, it may be necessary to dismantle the formwork.

XI. Product Codes and Weights

Product Code	Description	Weight	Product Code	Description	Weight
PANELS			CANTILEVER TIE DOWN		
SW450000	180 x 180 cm DeckFast Panel	104.0	SW450028	Bracing Frame 180	39.4
SW450001	180 x 90 cm DeckFast Panel	47.2	SW450029	Tie Down Frame	28.0
SW450002	180 x 75 cm DeckFast Panel	41.5	SW450030	Tie Down Hook	2.5
SW450003	180 x 60 cm DeckFast Panel	36.2	SW450032	Tie Down Hook and Handle	12.9
SW450004	180 x 45 cm DeckFast Panel	29.8	GUARDRAIL		
SW450005	90 x 90 cm DeckFast Panel	26.3	SW556042	Guardrail Post	9.9
SW450006	90 x 75 cm DeckFast Panel	22.9	SW450034	Guardrail Bracket	8.6
SW450007	90 x 60 cm DeckFast Panel	19.8	SW450037	Toeboard Clip	0.9
SW450008	90 x 45 cm DeckFast Panel	15.7	ACCESSORIES		
SW450009	90 x 180 cm Adjustment Panel	54.5	SW450049	DF Erection Rod	6.7
SW450010	90 x 90 cm Corner Panel	33.5	SW450043	Post Shore Bolt and Nut	0.1
SW450012	180 x 90 cm Crnr. Frame (plywd. req'd.)	38.6	SW450044	Swivel Clamp (1.9 x 3.0)	4.2
SW450011	180 x 90 cm Crnr. Plywood (reversible)	24.5	SW450066	Swivel Clamp (1.69 x 1.9)	4.2
POST SHORES AND SUPPORT			10.5 MM REPLACEMENT PLYWOOD		
SW450013	DF Bearing	5.3	SW969000	180 x 180 cm DeckFast Plywood	38.5
SW450014	Edge Support Bearing	4.0	SW969010	180 x 90 cm DeckFast Plywood	19.4
SW450016	Post Shore Tripod	26.1	SW969004	180 x 75 cm DeckFast Plywood	16.1
SW450017	350 Post Shore	46.5	SW969007	180 x 60 cm DeckFast Plywood	12.8
SW450018	550 Post Shore	74.2	SW969006	180 x 45 cm DeckFast Plywood	9.5
SW450019	550 Post Shore Sleeve	0.7	SW969009	90 x 90 cm DeckFast Plywood	9.7
SW450020	Post Shore T-Spring Bolt	0.3	SW969003	90 x 75 cm DeckFast Plywood	8.0
SW450023	Head Support Sleeve	4.4	SW969008	90 x 60 cm DeckFast Plywood	6.4
SW896070	Post Shore Release Pin 350	2.3	SW969005	90 x 45 cm DeckFast Plywood	4.7
SW896071	Post Shore Release Pin 550	2.6	SW969001	90 x 180 cm Adjustment Plywood	10.6
FILLER HARDWARE			SW969002	90 x 90 cm DeckFast Corner Plywood	10.8
SW450024	Head Support Shoe	1.4	HARDWARE		
SW450025	Adjustment Beam 180	15.9	SW450056	DeckFast Plywood Rivet 4.8 x 21.5	0.1
SW450026	Adjustment Beam 90	7.9			
SW450027	Transverse Beam	9.5			

Deck Fast™ Check List

The following items must be discussed with a new DeckFast prior to the start of the job.

Setting:

- () Start at location noted on drawing.
 1. The Bill of Material is designed and counted based on this starting point
 2. DeckFast configuration is designed for adequate bracing from this point
- () When setting in open areas carefully locate and chalk the starting row. It is very difficult to correct an area of locked DeckFast panels if improperly located.
- () Set posts properly with the release pin all the way in!
- () Set post staff height to proper hole position before placing panels. See the DeckFast Application Guide for height offset requirements.
- () Tie first panel into a corner, or wall, or around column. DeckFast must be locked, in both directions, by the structure, or bracing must be provided such as Bracing Frame 180s or tube and clamp, etc.
- () When setting in open areas without the lateral stability of walls and columns completely brace (in two directions) the starting row of panels. This is typically required for cantilevered applications.
- () Do not attempt to use DeckFast on slopes without additional bracing and instructions from Symons Technical Services.

Adjusting Heights:

- () Final level deck adjustments to DeckFast must be done in small increments. Large adjustment can cause posts at neighboring panels to unseat causing them to fall. DeckFast uses the End Bearing tabs to lock-in the system.

Cantilevered Panels:

- () Note side rail direction on 180 x 180 panels for cantilever posting. DeckFast can only be cantilevered in the direction of the center rib.
- () All cantilevered panels must be tied down and checked prior to anyone walking out on them.

Note:

It is extremely important that the user understand cantilever support. Review the DeckFast warning information and notes if cantilevered panels are used. Read the appropriate information in the Assembly Instructions.

Tripods:

- () DeckFast Tripods are provided as temporary post shore support during erection. Tripods are not intended to resist lateral stability loads.
- () Also use Tripods along the edge of the completed work in progress at the end of a workday. This will provide extra protection against accidental bumping of the system.

Release Agent:

- () DeckFast panels require an application of a quality form release or other provisions prior to each pour to insure a clean release. Failure to do so will likely result in damage to the plywood and/or panel during the stripping process.

Stripping:

Do not strike the bottom of the post to strip!

- () Fully release the posts before stripping by:
 1. Engaging stripping pin.
 2. Turning the post shore screw adjustment two full turns.

Notes:

1. Failure to provide adequate clearance will result in the panel wedging between the post and the slab causing damage to the panel and subsequent charges!
2. Do not let the post shore fall! This may result in damage to the End Bearing. Bent End Bearings will not allow the panels to seal properly.

Wind Uplift:

- () If uplift is expected in windy areas, panels must be held down. There are two options:
 1. Steel reinforcing or other equivalent material loads must be placed on the panels which may be subjected to uplift, or
 2. Bearing Bolts (panel lift-off retainers) must be installed.

Notes:

1. Installation of Bearing Bolts requires removing the end cap, inserting the bolt and fastening the nut inside the bearing with use of a special deep socket tool.
2. Once Bearing Bolts are in place panels overhead placement is not possible. Panels may only be assembled from underneath by rotating them into place.

	<h2> WARNING</h2> <h3>Improper Use of Concrete Accessories Can Cause Severe Injury or Death</h3> <p>Read, understand and follow the information and instructions in this publication before using any of the Dayton Superior concrete accessories displayed herein. When in doubt about the proper use or installation of any Dayton Superior concrete accessory, immediately contact the nearest Dayton Superior Service Center or Technical Service Department for clarification. See back cover for your nearest location.</p>
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Dayton Superior products are intended for use by trained, qualified and experienced workmen only. Misuse or lack of supervision and/or inspection can contribute to serious accidents or deaths. Any application other than those shown in this publication should be carefully tested before use.

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

Worn Working Parts

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

Shop or Field Modification

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

Since Dayton Superior cannot control workmanship or conditions in which modifications are done, Dayton Superior cannot be responsible for any product altered in the field.

Interchangeability

Many concrete accessory products that Dayton Superior manufactures are designed as part of a system. Dayton Superior strongly discourages efforts to interchange products supplied by other manufacturers with components supplied by Dayton Superior. When used properly, and in accordance with published instructions, Dayton Superior products have proven to be among the best designed and safest in the industry. Used improperly or with incompatible components supplied by other manufacturers, Dayton Superior products or systems may be rendered unsafe.

Installation

WARNING

1. Dayton Superior Corporation products shall be installed and used only as indicated on the Dayton Superior Corporation installation guidelines and training materials.
2. Dayton Superior Corporation products must never be used for a purpose other than the purpose for which they were designed or in a manner that exceeds specific load ratings.
3. All instructions are to be completely followed to ensure proper and safe installation and performance.
4. Any improper misuse, misapplication, installation, or other failure to follow Dayton Superior Corporation's instruction may cause product malfunction, property damage, serious bodily injury and death.

THE CUSTOMER IS RESPONSIBLE FOR THE FOLLOWING:

1. Conformance to all governing codes
2. Use of appropriate industry standard hardware
3. The integrity of structures to which the products are attached, including their capability to safely accept the loads imposed, as evaluated by a qualified engineer.

SAFETY INSTRUCTIONS:

All governing codes and regulations and those required by the job site must be observed. Always use appropriate safety equipment

Design Changes

Dayton Superior reserves the right to change product designs, rated loads and product dimensions at any time without prior notice.

Note: See Safety Notes and Safety Factor Information.



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THE POWER OF RED™

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