

## Brace Wind Loading

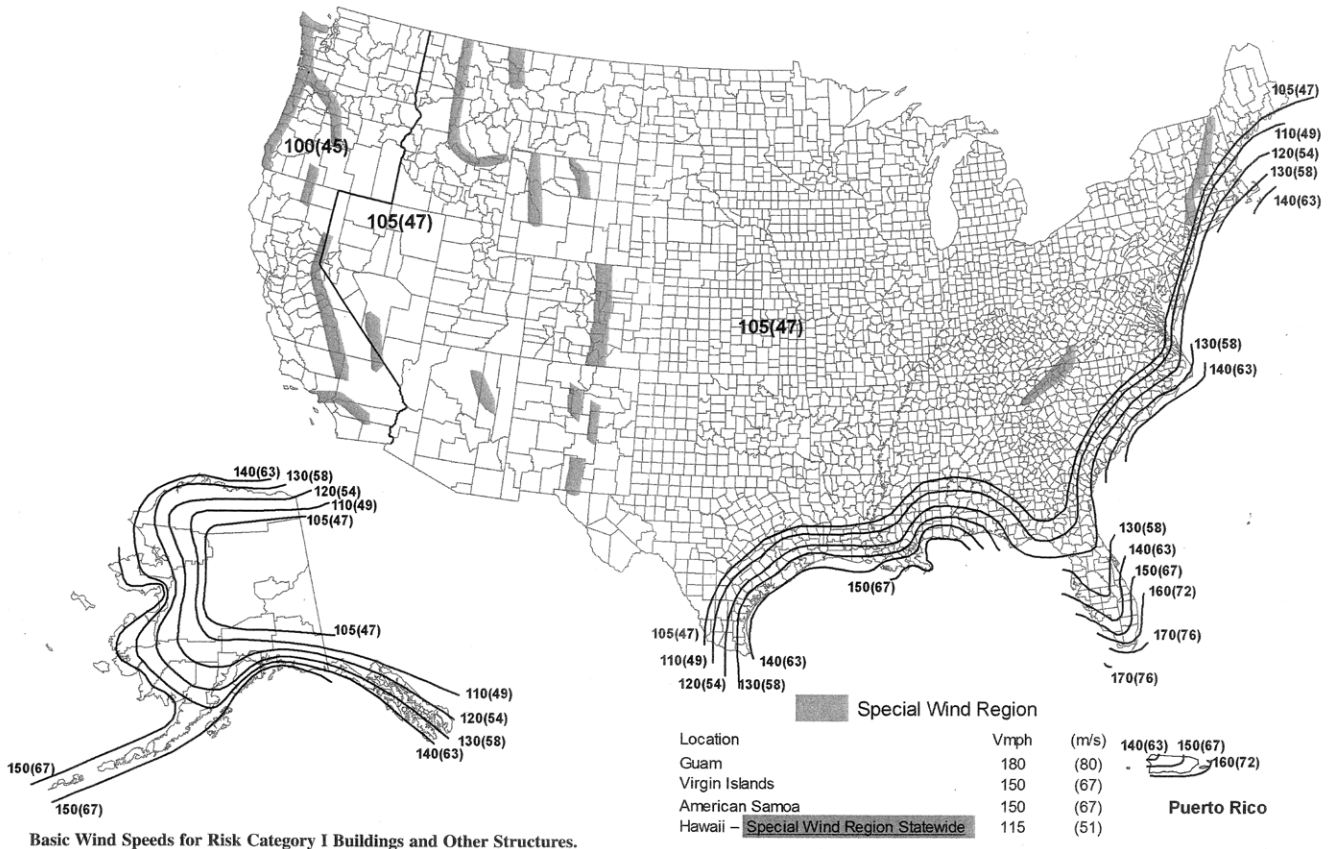
Bracing recommendations shown in these instructions are for the sole purpose of temporarily bracing fully erected tilt-up panels against wind loads only. Dayton Superior uses the wind load provisions defined in the latest editions of American Society of Civil Engineers (ASCE) *Minimum Design Loads for Building and Other Structures*, *ASCE-37 Design Loads of Structures During Construction*, and the Tilt-Up Concrete Association *Guideline for Temporary Wind Bracing* to determine the wind loads that are applied to an erected tilt-up panel.

The ASCE 7-10 standard specifies a basic wind speed of 105 mph for most areas of the United States. The 105 mph basic wind speed is based on a 15% probability of three second gust wind speed in exceedence at thirty-three feet above ground level.

The ASCE-37 standard allows and the Tilt-Up Association recommends, that the 105 mph basic wind speed be multiplied by a factor of 0.80 for projects where the construction period ranges from 6 weeks to one year. For projects of other duration, the reader should refer to ASCE-37 for the appropriate reduction factor. This allows the use of a construction period ultimate design wind speed of 84 mph in calculating ultimate brace loads for most areas of the United States.

For areas of the country having a basic wind speed different than 105 mph, reader shall refer to ASCE-7 for the applicable design wind speed.

Parts of the United states that are in the Special Wind Regions shown on the ASCE Basic Wind Speed map will require a higher construction period design wind speed than normal. The construction period design wind speed used in the design of the bracing for a project designed by Dayton Superior is shown in the lower left hand corner of each panel layout sheet. If the local building code requires a higher construction period design wind speed, DO NOT erect any panels before contacting Dayton Superior Technical Assistance for additional bracing recommendations.



Bracing Information

**Warning:** If wind loads of 35 mph occur, an inspection of all brace connections should be made. Loose connections can cause panels to fall. If local codes require a higher construction period design wind speed, contact Dayton Superior for additional bracing recommendations.

Location	V mph	V m/s
Hawaii	varies	varies
Puerto Rico	varies	varies
Alaska	varies	varies

## Brace Wind Loading, continued

Bracing recommendations are for the sole purpose of temporarily bracing fully erected concrete tilt-up panels during construction — against wind loads only. This temporary bracing design is based on the latest editions of The American Society of Civil Engineers (ASCE-7) *Minimum Design Loads for Building and other Structures*, *ASCE-37 Design Loads of Structures During Construction*, and the Tilt-Up Concrete Association *Guideline for Temporary Wind Bracing* to determine the wind loads that are applied to an erected tilt-up panel. The ASCE standards and the TCA guideline allow the basic wind speed, which is based on a 15% probability of three second gust wind speed in exceedance at thirty-three feet above ground level.

Brace anchors and main, knee, lateral and/or end braces are not designed or intended to sustain impact loads. Precautions must be taken to arrange the panel erection sequence so as to avoid the potential for impacting upright panels or portions of the bracing system. Bracing recommendations for other loads or forces that might be applied to the bracing system are beyond the scope of Dayton Superior. For bracing recommendations other than wind loads, the user should engage a design agency with capabilities of performing such a service.

## Brace Removal

This bracing system is designed to temporarily support tilt-up panels against wind loads until the building structure is complete and self supporting. The bracing system should never be disconnected or removed until the panels are secured by the permanent structural connections and all lateral load resisting systems are securely in place.

If the structural documents do not indicate when the temporary bracing system can be removed, the engineer of record should be consulted.

### Safety Notes:

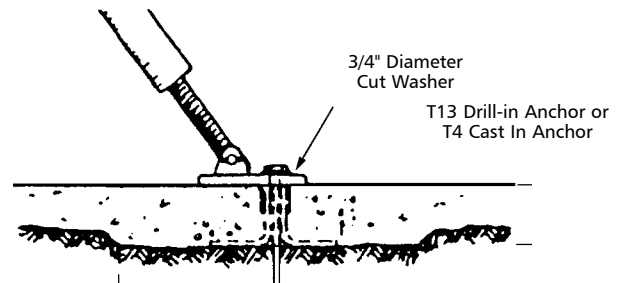
- Panel should be plumb with braces and knee braces installed before panels are released from the crane.
- Lateral bracing should be installed immediately upon the crane and crew clearing the braces and before the next panel is erected.
- Lateral bracing must be continuous, connected at each brace, and tied off with end braces at the end of each line.
- Panels require a minimum of two braces per panel.
- End braces to ground and/or crossbraces must be installed every 100 ft. to prevent lateral movement of braces and to provide total brace stability.
- All members of the brace system must be in place and secured at the end of each day.
- Knee and lateral bracing must be located as shown or the panel \_\_\_\_\_ generally near mid-length of pipe brace.
- Knee brace must be firmly fixed at bottom end to prevent possible upward buckling of main brace.
- Do not erect panels or continue working during excessive windy or adverse weather conditions.
- All brace inserts should be a minimum of 12" from any panel edge, opening, control joint or construction joint.
- Panel bracing is designed to withstand specified wind loads until panels are connected to the structural system of the building. Do not remove any members of the bracing system until all structural connections are completed.
- Use only the brace type as noted on the Panel Layout Sheet. No substitute brace hardware shall be used and all braces must be positioned at the specified locations.
- For special bracing conditions that require deviation from the bracing dimensions shown on the Panel Layout Sheet contact Dayton Superior for recommendations.
- See Panel Layout Sheet for type of brace, number of braces per panel, as well as knee and lateral bracing requirements.
- Welding or bolting the tilt-up panels in place might preclude the use of braces.
- After winds of 35 mph or more have been experienced at the job site, the tilt-up contractor must check the tightness of the bolts that secure the wall and foot plates to the concrete. Re-tightening of these bolts to the proper torque will assure that the pipe braces are secure.
- The safe working load of the panel's bracing system may be drastically reduced if other types of brace anchors are used as part of this project's bracing system, other than specified brace anchors.
- Slab design must be reviewed by the engineer of record to insure slab is capable of withstanding the loads being transferred from the braces.

**Warning!** Failure to install knee, lateral and end braces (when required) will greatly reduce the safe working load of the specified brace and may allow panels to fall causing severe injury or death.

## Brace to Floor Slabs

Dayton Superior specifies ONLY the T4 cast-in-place anchor or the T13 COIL-ANCHOR drill-in anchor for use in attaching braces to the floor slab.

**Warning!** The floor slab sections may not be adequate to safely support the loads applied to the floor slab by the wall braces. It is the contractor's responsibility to decide if a section of floor slab can safely support the applied brace loads. Dayton Superior cannot make this determination as it has no control over floor slab thickness, control joint spacings, width of the floor slab "leave out" strip or other factors that may affect the load carrying capacity of the floor slab. Movement of a section of floor slab can cause panels to fall, which may result in property damage and/or severe personal injury. The floor slab should be designed by a competent engineer to resist the applied loads. To assist the contractor or engineer, the total brace load per panel is shown on each panel detail sheet provided by Dayton Superior.



## Brace Length and Safe Working Loads

### How to Calculate Brace Length

**D** = Elevation — top of panel above floor slab (not necessarily same as panel height).

**W** = Wall insert dimension =  $2/3 D$

**F** = Floor insert dimension =  $3/4 W$

**B** = Brace length =  $5/4 W$

The brace dimension (W) must be a minimum of 5% of the panels overall height above the panel's geometric and mass center of gravity. After the locations of the braces are determined, the panel structure should be checked to verify that it is strong enough to resist temporary wind loads.

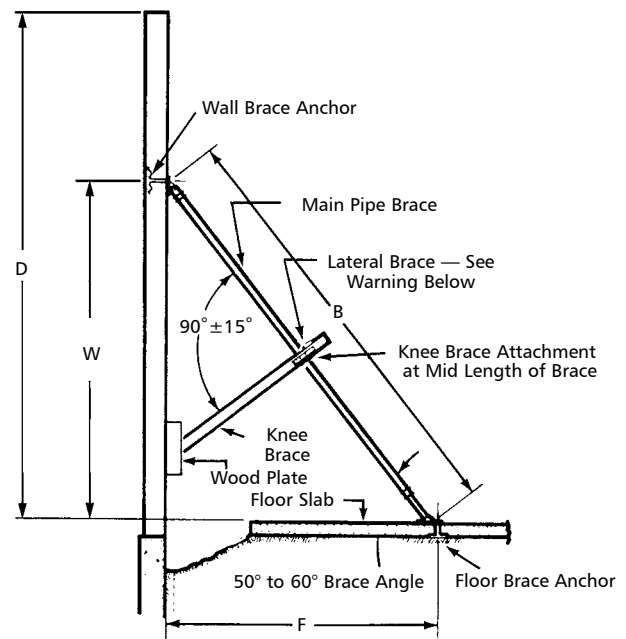
Brace locations other than those shown may drastically increase brace loads. Brace angles over 60° from the horizontal result in poor mechanical advantage and excessive vertical kick, while brace angles under 50° decrease brace buckling strength due to greater length and excessive sag.

Without knee brace means that brace type can be adjusted for various lengths of "B" shown, and brace may be used without knee, lateral or end bracing.

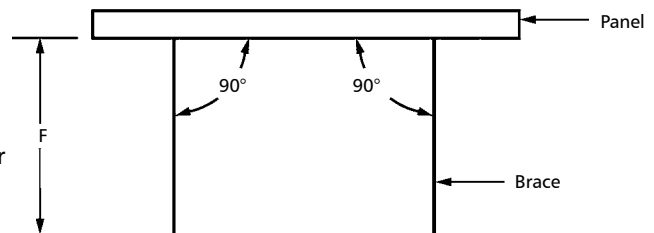
With knee brace means that brace type can be adjusted for various lengths of "B" shown and requires the use of knee, lateral and end bracing to obtain the SWL listed.

**Danger!** Bracing must be installed at  $90^\circ \pm 5^\circ$  to plane of panel or brace safe working load will be greatly reduced.

The following is a quick "Rule of Thumb" to use in determining if a brace is installed at  $90^\circ \pm 5^\circ$  to the panel: The brace may be skewed left or right 1 inch for every 1 foot that the brace anchor is located away from the wall. For example: If your dimension "F" is 15 ft, then your braces may be skewed 15" left or right and still stay within the required 5° tolerance. See panel layout sheets for proper "F" dimension.



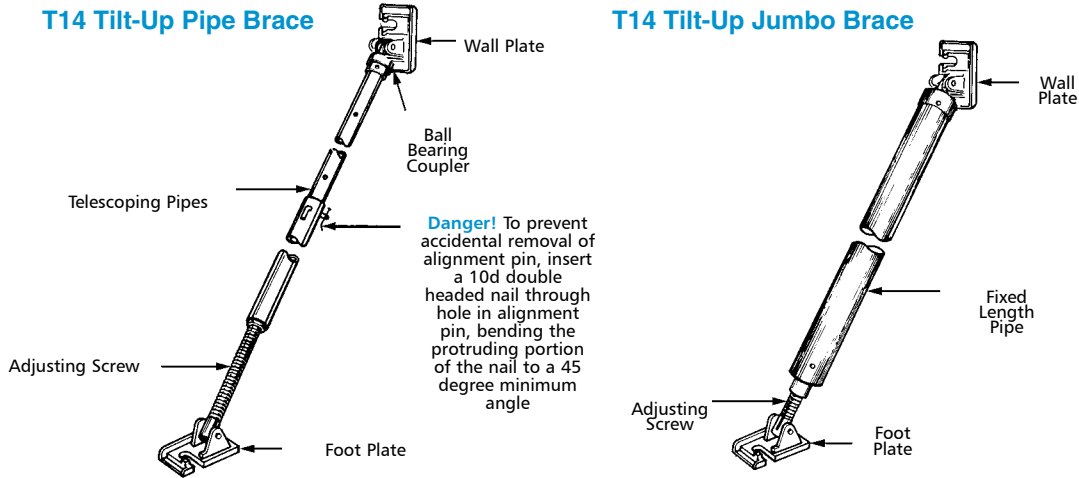
**Note:** End braces to ground and/or crossbraces must be installed every 100 ft to prevent lateral movement of braces and to provide total brace stability.



Plan View

## T14 Tilt-Up Wall Braces

The T14 Tilt-Up Wall Braces are all steel, heavy duty wall braces designed to quickly and easily align and brace tilt-up wall panels. Rough adjustment of the T14 braces is easily accomplished by telescoping the pipes to the nearest incremental hole. Final adjustment is then achieved by simply turning the brace. Dayton Superior wall braces are available in numerous sizes to provide a continuous range of tilt-up panel heights of fifty feet or more. Refer to the chart below for additional information.



Type	Description	Minimum and Maximum Brace Length
B1	On-Site Pipe Brace	7'-6" to 8'-10"
B2	Regular Pipe Brace	13'-0" to 20'-6"
B4	Heavy Duty Regular Pipe Brace	14'-6" to 23'-6"
B5	Heavy Duty Long Pipe Brace	22'-6" to 39'-0"
B6	Short Pipe Brace	10'-0" to 14'-0"
B7	Short Jumbo Brace	17'-0" Fixed Length
B8	Jumbo Brace	22'-0" Fixed Length
B9	Jumbo Brace with 5'-0" Extension	27'-0" Fixed Length
B10	Jumbo Brace with 10'-0" Extension	32'-0" Fixed Length
B11	Tru-Iltt Brace	25'-6" to 40'-0"
B12	Jumbo 5-1/2"	32'-0" Fixed Length
B14	B12 Jumbo Brace, 10'-0" Extension	42'-0" Fixed Length
B15	B12 Jumbo Brace 20'-0" Extension	52'-0" Fixed Length
B16	B12 Jumbo brace, 5' 0" Extension	37'-0" Fixed Length
B17	B17 Superior Brace	32'-0" to 42'-0"
B18	B18 Superior Brace	42'-0" to 52'-0"

**To Order:**  
Specify: (1) quantity, (2) name, (3) model.

**Example:**  
200, T14 Tilt-Up Wall Braces.  
Model B8.

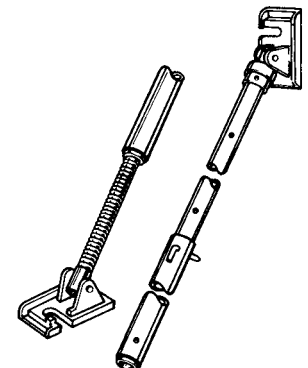
**Notes:** Field assembly is required for B14 and B15 braces.  
B11 Brace available West Coast only.  
Please contact Customer Service for lead times on B17 and B18 braces.

## T15 Pipe Brace Extensions

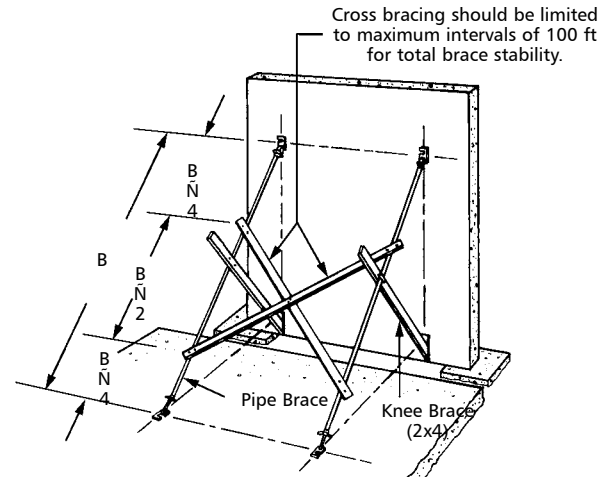
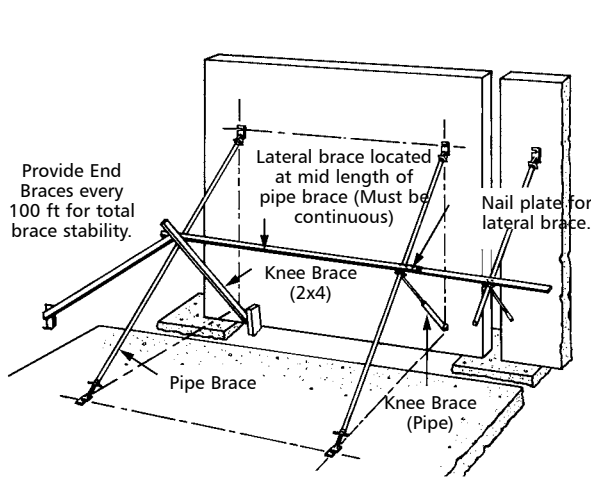
The Dayton Superior Pipe Brace Extensions are available for the B8 and B12 pipe brace models. The T15 extension for the B12 model extends the brace five feet or ten feet increments. Extensions to the B8 brace are available in five foot and ten foot lengths.

**To Order:**  
Specify: (1) quantity, (2) name, (3) model.

**Example:**  
40, T15 Pipe Brace Extension, 5' extension for B8 braces.



## Knee, Lateral and End Bracing

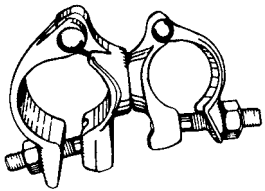


In order to properly strengthen the main pipe brace, knee bracing, lateral bracing and end bracing must be installed at the mid-point of the main pipe brace.

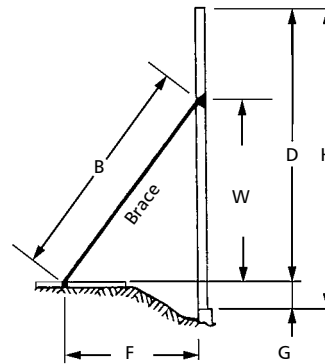
Cross bracing is an acceptable alternative to lateral bracing and end bracing. This method provides excellent panel stability when the erection sequence dictates that there are no adjacent panels that would make continuous lateral bracing possible.

Lateral bracing must be limited to a maximum of 100 feet and each interval of lateral bracing must begin and end with either an end brace to ground or cross-bracing. In addition, each day a panel erection end or cross-bracing must be installed on the first and last wall brace to prevent compromise of the day's bracing activity.

Either lumber or pipe may be used as knee and end braces depending on the preference of the contractor. Pipe style knee or end braces shall be Dayton Superior T16 Pipe (1-1/2" Dia.) Knee Brace and its upper end shall be attached to the main pipe brace using the T17 Swivel Coupler, #3 Style.

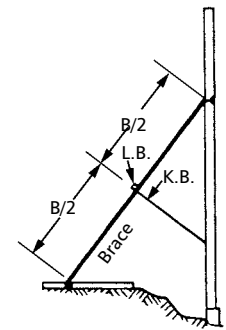


**T17 Swivel Coupler**  
Connects 1-1/2" diameter pipe knee brace to 2" or 2-1/2" diameter pipe brace.



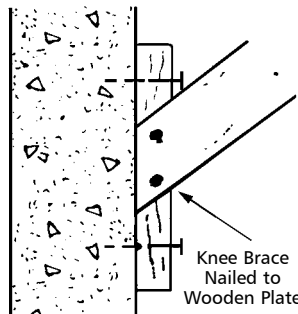
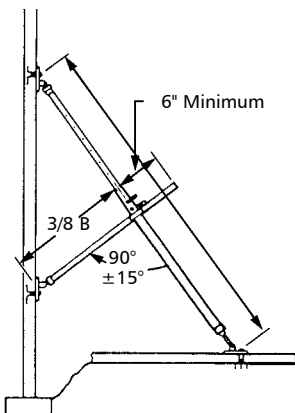
**KO**

If KO is listed after the brace type, this indicates that the specified brace may be used without knee, lateral or end bracing.



**K1**

If K1 is listed after the brace type, this indicates that the specified brace shall be used only with knee, lateral and end bracing.

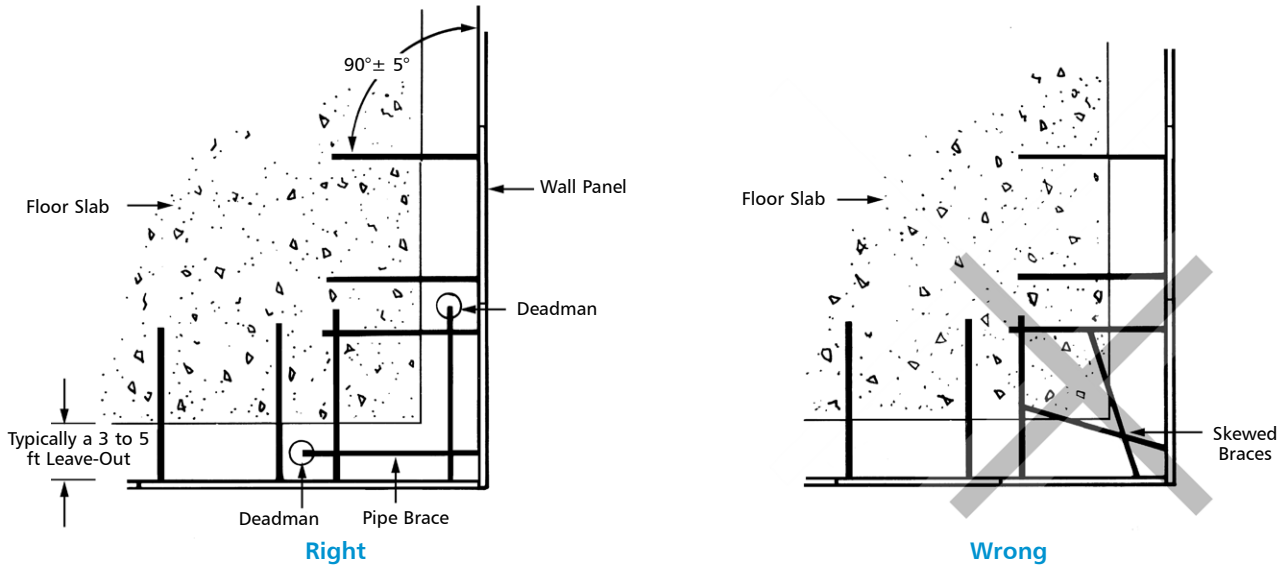


**Warning!** It is common to refer to the sub-bracing support system of the main braces as knee bracing. However, the user is to be aware that when knee bracing is required, it means that lateral bracing and end bracing must also be included. This sub-support system is needed to reduce the buckling length of the main pipe braces and must have firm connections at all points. The knee brace must also be connected at its bottom end.

**Warning!** If winds over 35 miles per hour are experienced on the job site, all bolts that secure the wall and foot plates to the concrete must be checked and retightened to the proper torque to assure that the pipe braces are secure.



## Corner Bracing



The proper method of bracing corner panels is shown above. Attachment of braces to deadman in the leave-out area allows the braces to be properly located without having to skew the braces for attachment to the floor slab. Corner brace lengths must be adjusted to eliminate pipe interference.

**Warning!** Braces must be installed at  $90^\circ \pm 5^\circ$  to plane of panel or brace safe working load will be drastically reduced. Panel stability may be jeopardized when braces are skewed.

## Cast-In-Place Brace Anchor Loading

When using Dayton Superior T14 Tilt-Up Pie Braces the maximum brace load and safe working load per brace anchor that can be safely transferred to T6A, T5A or T4 Brace Anchors is as follows:

Floor or Wall Thickness	Safe Working Load, Tension per Brace Anchor	Torque Per Anchor	
		Minimum	Maximum
4-1/2" or Thicker	6,000 lbs	80 ft lbs	115 ft lbs
5" or Thicker	7,500 lbs	100 ft lbs	140 ft lbs

SWL provides a safety factor of approximately 2 to 1 in 2,500 psi Normal Weight Concrete.

### T6A Brace Anchor

Floor or Wall Thickness	Safe Working Load Tension per Brace Anchor	Safe Working Load Shear per Brace Anchor	Torque per Anchor	
			Minimum	Maximum
5" or Thicker	7,500 lbs	7,680 lbs	100 ft lbs	140 ft lbs
7.25" or Thicker	8,380 lbs	8,700 lbs	100 ft lbs	140 ft lbs

SWL provides a safety factor of approximately 2 to 1 in 2500 psi Normal Weight Concrete.

Dayton Superior specifies the use of T4, T5-A, T6-A cast-in-place brace anchors or the T13 Coil-Anchor drill-in brace anchor ONLY. Dayton Superior does not specify or approve any other type of cast-in-place or drill-in anchor for the bracing of tilt-up wall panels. **If any other type of brace anchor is used, the contractor does so at his own risk and assumes the risk of all serious personal injury, death or property damage which may result. By using such unspecified and unapproved brace anchor, the contractor agrees to indemnify and hold Dayton Superior harmless against all damages and losses that may occur.**

When two braces per panel are required, the normal brace insert location for solid panels is .1 to .2 of panel width, minimum of 12", inward from panel side. Contact Dayton Superior for recommendations on panels requiring 3 braces or more, on panels with openings or for other unusual conditions.

**Note:** Notify DSC Engineering Department if slab thickness is less than 5" thick. Brace design must be changed for thinner slabs.

## Bracing to Cylindrical Deadman

Use the chart at the right to select the proper size deadman if your project requires the use of a deadman for brace attachment in lieu of an anchor cast into a floor slab.

### How to select the proper size deadman:

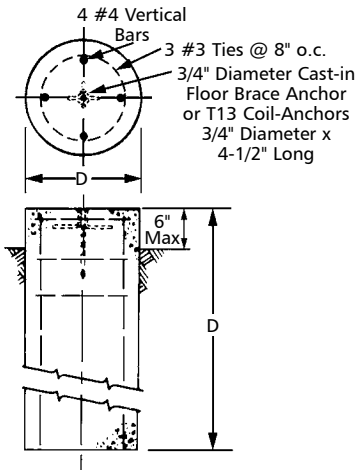
1. Determine the maximum applied brace load for the project.
2. The proper deadman must weigh at least as much as the maximum individual brace load.
3. Find a number on the deadman chart that is equal to or greater than the required deadman weight. Follow the numbers in the top column and the far left column of the chart for the proper diameter and height of the deadman.

### Example:

Maximum applied brace load = 3,200 lb.

Acceptable deadman sizes:

Diameter	Height
30"	4'-6"
36"	3'-6"
42"	2'-6"



Height	Weight of Deadman (Pounds)				
	30" Diameter	36" Diameter	42" Diameter	48" Diameter	60" Diameter
2'-0"	1,470	2,120	2,890	3,770	5,888
2'-6"	1,840	2,650	3,610	4,710	7,360
3'-0"	2,210	3,180	4,330	5,650	8,832
3'-6"	2,580	3,710	5,050	6,600	10,304
4'-0"	2,950	4,240	5,770	7,536	
4'-6"	3,310	4,770	6,490	8,478	
5'-0"	3,680	5,300	7,220	9,420	
5'-6"	4,050	5,830	7,931		
6'-0"	4,420	6,360	8,652		
6'-6"	4,790	6,890	9,373		
7'-0"	5,150	7,420			
7'-6"	5,520	7,950			
8'-0"	5,890	8,480			
8'-6"	6,260	9,010			
9'-0"	6,630				

**Note:** Always hand or auger excavate hole for deadman.  
 Minimum allowable soil bearing pressure is to be 1,500 psf.  
 Minimum concrete compressive strength  $f_c$  shall be = 2,500 psi at use.  
 1 Kip = 1,000 lbs.

## Brace Maintenance

During the construction process braces may be exposed to adverse conditions that could damage or render them unusable. Braces should be inspected for proper operation, damage and wear after each use.

This inspection is typically performed by Dayton Superior or Dayton Superior Certified Tilt-Up Dealer when the braces are returned. However, when braces are transferred from one job to another without being returned to Dayton Superior or its dealer for maintenance, the user must inspect all braces prior to their being reused.

This inspection should check for missing parts, wear, dings, kinks, straightness, indication of any application of heat and/or other damage.

Any brace that shows signs of wear, has missing parts, damage, or is questionable should be set aside and not used.

## Accubrace® Total Bracing System



Accubrace is a total bracing system of Braces and Helical Ground Anchors engineered for unsurpassed speed and efficiency for tilt-up or pre-cast applications. Installed by Dayton Superior professionals, this system provides an affordable, engineered solution.

### Braces

A high-capacity brace designed to allow increased brace spacing for temporary stabilization of concrete wall panels.

### Helical Ground Anchors

The Helical Ground Anchor (HGA) is part of a total bracing system designed for rapid installation and the ability to immediately load the helical ground anchor for unsurpassed speed and efficiency on any tilt-up or pre-cast project.

### HGA Extension

Certain sites where the foundation soils are lower strength may require the use of an HGA Extension. This shaft is the same section (1½" square bar) but is 4' in length and has a 10" helical plate set at 10" from the top of the extension.

### Transition Brace Connector

The Transition Brace Connector connects the brace to the HGA. It leads to quicker installation and better alignment of the brace center-line to the HGA center-line.

### Advantages:

- Reduces the number of braces needed by up to 60% to provide accelerated construction
- Engineered bracing system with documented load capacity
- We offer Professional Engineer review and and stamp services
- Bracing on the outside of wall avoids structural steel erection
- Bracing on the inside of wall without a slab avoids holes in slab and/or vapor barrier
- Integrated in-line connection to the brace with the HGA and Transition Brace Connector
- Rapid, all-weather installation
- Recipient of the 2007 Robert Aiken Innovation Award sponsored by the TCA.
- Removable and reusable



Part #	Standard Brace Length	Brace Length Min.	Brace Length Max	Ultimate Load (Pull)	Brace Working Load (Pw)	Brace Weight*
B21F	21'	21'-0"	23'-3"	23,200 lb	15,500 lb**	230 lb
B27BF	27'	25'-7"	27'-3"	27,000 lb	18,000 lb**	350 lb
B32F	32'	30'-9"	33'-3"	22,500 lb	15,000 lb**	405 lb
B37F	37'	35'-9"	38'-3"	18,000 lb	12,000 lb	1300 lb
B42F	42'	41'-0"	43'-3"	22,300 lb	14,800 lb	775 lb
B52F	52'	53'-3"	53'-3"	22,500 lb	15,000 lb**	975 lb
B62F	62'	63'-3"	63'-3"	12,000 lb	8,000 lb	1,300 lb

NOTES: \* Does not include weight of connectors.

\*\* BWL based on adequate brace to HGA connection  
Safety Factor is 1.5:1

Description	SWI Tension	Length
Standard HGA	12,000 lb	7'-2"
Standard HGA Extension*	15,000 lb	4'-0"

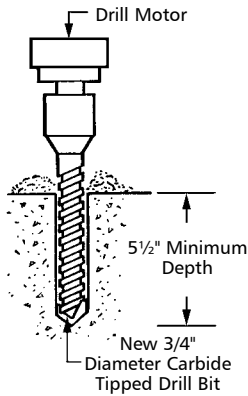
\* NOTE: When an extension is used, the working load of the HGA increases to 15,000 lb for the installed torque of 2,200 ft/lb.



## T13 Coil-Anchor™ 3/4" Diameter x 4-1/2" Long Application Sequence

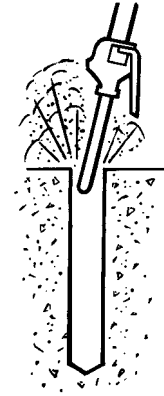
	<ol style="list-style-type: none"> <li>1. Drill a 3/4" diameter hole perpendicular to the floor surface with a new carbide tipped drill. Depth of the hole must be a minimum 4". Holes drilled through slabs that are 5" or greater are acceptable. Do not use core bits for T13 anchor holes. Minimum compressive strength of the concrete must be 2,500 psi prior to installation of T13 anchors. Minimum edge distance for the T13 anchor is 12". <b>Warning!</b> Do not use T13 (4-1/2") anchors in slabs less than 5" thick. The insufficient embedment depth will not allow required load capacity.</li> </ol>							
<p>T13 Coil-Anchor Bolt Patent #5,006,023 3/4" Dia. x 4-1/2" Long</p>	<ol style="list-style-type: none"> <li>3. Thread the Tang onto the T13 bolt. Finger tight is sufficient, no more than 1-1/2 turn.</li> </ol> <p><b>Caution!</b> Do not attempt to pre-expand the Tang. For proper load capacity, the Tang must not be installed over 1-1/2 turn on the bolt.</p> <p><b>Warning!</b> Do not attempt to use a standard coil bolt with the T13 Coil-Anchor Tang. The Coil-Anchor Bolt is a tapered bolt and is not interchangeable with standard coil bolts.</p> <h3>T13G Thread Gauge</h3> <p><b>Note:</b> T13G Thread Gauges are recommended, to check T13 bolt thread wear, when reusing T13 Coil-Anchor Bolts.</p>							
<ol style="list-style-type: none"> <li>6. The tension safe working load (SWL) per T13 Coil-Anchor is shown below:</li> </ol>	<table border="1"> <thead> <tr> <th>Floor Slab Thickness</th> <th>SWL Tension per Anchor</th> <th>Minimum Torque per Anchor</th> </tr> </thead> <tbody> <tr> <td>5" or Thicker</td> <td>7,500 lbs</td> <td>200 ft lbs</td> </tr> </tbody> </table>	Floor Slab Thickness	SWL Tension per Anchor	Minimum Torque per Anchor	5" or Thicker	7,500 lbs	200 ft lbs	
Floor Slab Thickness	SWL Tension per Anchor	Minimum Torque per Anchor						
5" or Thicker	7,500 lbs	200 ft lbs						
<h3>T13L Set-Eez™ Dry Film Lubricant</h3>	<p>The Dayton Superior T13L Set-Eez Dry Film Lubricant is designed to facilitate the reuse of the T13 Coil-Anchor bolt. The T13L lubricant is available in 6 oz. jars.</p>							
<p><b>To Order:</b> Specify: (1) quantity, (2) name.</p> <p><b>Example:</b> 4 bottles, T13L Set-Eez Dry Film Lubricant.</p>		<p>Bracing Information</p>						

## T13 Coil-Anchor™ 3/4" Diameter x 6" Long Application Sequence



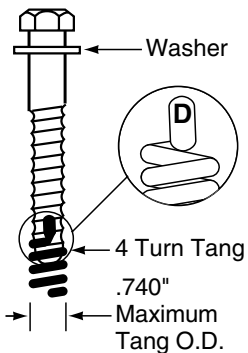
1. Drill a 3/4" diameter hole perpendicular to the floor surface with a new carbide tipped drill. Depth of the hole must be a minimum 5-1/2". Holes drilled through slabs that are 6" or greater are acceptable.  
Do not use core bits for T13 anchor holes.  
Minimum compressive strength of the concrete must be 2,500 psi prior to installation of T13 anchors.  
Minimum edge distance for the T13 anchor is 12".

**Warning!** Do not use T13 (6") anchors in slabs less than 6" thick. The insufficient embedment depth will not allow required load capacity.



2. Thoroughly clean the drilled hole with compressed air.

T13 Coil-Anchor Bolt  
Patent #5,006,023  
3/4" Dia. x 6" Long



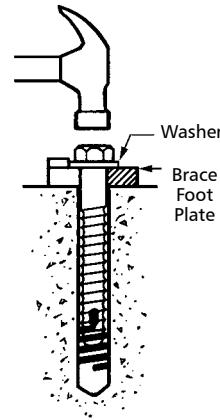
3. Thread the Tang onto the T13 bolt. Finger tight is sufficient, no more than 1-1/2 turn.

**Caution!** Do not attempt to pre-expand the Tang. For proper load capacity, the Tang must not be installed over 1-1/2 turn on the bolt.

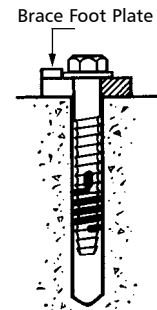
**Warning!** Do not attempt to use a standard coil bolt with the T13 Coil-Anchor Tang. The Coil-Anchor Bolt is a tapered bolt and is not interchangeable with standard coil bolts.

### T13G Thread Gauge

**Note:** T13G Thread Gauges are recommended, to check T13 bolt thread wear, when reusing T13 Coil-Anchor Bolts.



4. Insert the T13 anchor through the foot plate of the wall brace and into the properly drilled hole. Drive the bolt down until the cut washer rests on the foot plate.



5. Tighten the T13 anchor with a 3/4" impact wrench, then use a torque wrench to insure correct tightness. Refer to the chart for proper torquing values.

**Warning!** If wind loads over 35 miles per hour are experienced on the job site, all T13 anchors should be checked with a torque wrench to verify proper torque values are maintained.

6. The tension safe working load (SWL) per T13 Coil-Anchor is shown below:

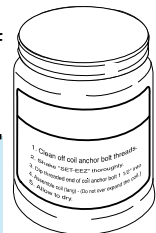
Floor Slab Thickness	SWL Tension per Anchor	Minimum Torque per Anchor
6" or Thicker	10,400 lbs	200 ft lbs

**Notes:** Safe working loads are based on an approximate factor of safety of 2:1. This assumes a minimum slab compressive strength of 2,500 psi and a properly installed T13 anchor as detailed above.

**Warning:** When using T13 Coil-Anchor Bolts, always clean and lubricate the bolt with T13L Set-Eez. Failure to do so will result in bolt wear, lower than expected load capacity and possible premature failure.

### T13L Set-Eez™ Dry Film Lubricant

The Dayton Superior T13L Set-Eez Dry Film Lubricant is designed to facilitate the reuse of the T13 Coil-Anchor bolt. The T13L lubricant is available in 6 oz. jars.

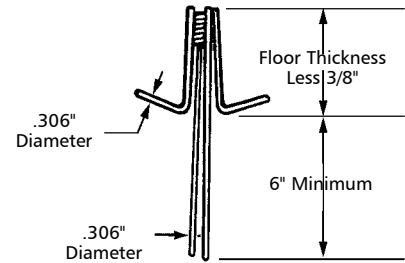


**To Order:**  
Specify: (1) quantity, (2) name.

**Example:**  
4 jars, T13L Set-Eez Dry Film Lubricant.

## T4 Brace Anchor for Fill

The Dayton Superior T4 Brace Anchor for Fill is a 3/4" diameter insert designed for anchoring wall braces to the floor slab. The angular offset of the legs provides a gauge and stop when the anchor is pushed into the fill. The T4 anchor is furnished with a T21 Locator Plug factory installed.



T4 Brace Anchor for Fill

**To Order:**

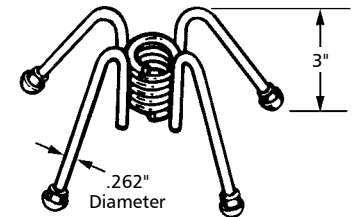
Specify: (1) quantity, (2) name, (3) slab thickness.

**Example:**

120, T4 Brace Anchors for 6" slab.

## T5A Inverted Wall Brace Anchor

The Dayton Superior T5A Inverted Wall Brace Anchor is designed to place the 3/4" diameter anchorage coil at the bottom of the poured panel. The anchorage is then available for fastening the brace to the cast-down face of the panel after it has been lifted and set in place. The T5A anchor is furnished with plastic tipped feet and a T21 Locator Plug. Standard height of the T5A anchor is 3", minimum panel thickness is 4".



T5A Inverted Wall Brace Anchor

**To Order:**

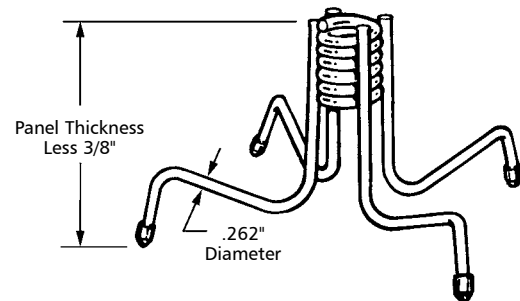
Specify: (1) quantity, (2) name.

**Example:**

200, T5-A Inverted Brace Anchors.

## T6A Brace Anchor

The Dayton Superior T6A Brace Anchor is a 3/4" diameter coil insert designed to be easily positioned and tied into the rebar mat of a tilt-up panel. The T6A anchor is available with plastic dipped, plastic tipped or stainless steel feet and with a T21 locator plug factory installed.



T6A Brace Anchor

**To Order:**

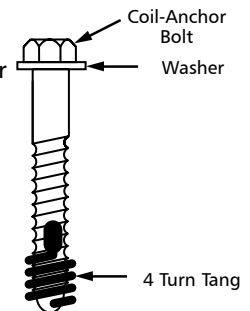
Specify: (1) quantity, (2) name, (3) type of corrosion protection, (4) type of locator plug, (5) slab thickness.

**Example:**

200, T6-A Brace Anchors with plastic tipped feet and T21 locator plugs for 6" slab thickness.

## T13 Coil-Anchor

The Dayton Superior T13 Coil-Anchor is a drill-in expansion anchor designed for use in the floor slabs of tilt-up buildings to attach and anchor wall braces. Each T13 plug includes the bolt, one cut washer and one tang. Available in 3/4" diameter x 4-1/2" or 6" lengths as specified.



T13 Coil Anchor

**To Order:**

Specify: (1) quantity, (2) name, (3) length.

**Example:**

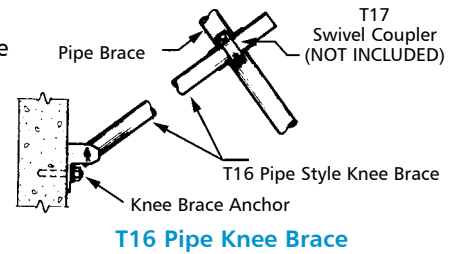
200, T13 Coil-Anchors x 4-1/2" long.



Available exclusively through Certified Dayton Tilt-Up 3 Dealers.

## T16 Pipe Knee Brace

The Dayton Superior T16 Pipe Knee Brace is an all steel, 1-1/2" diameter knee brace available in 10'-6" and 14'-6" lengths. The T16 knee brace is used in conjunction with the T17 Swivel Coupler to add strength and stability to standard wall braces.



**To Order:**

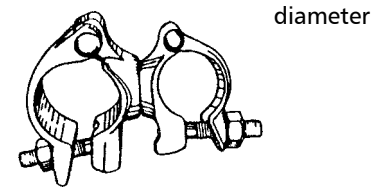
Specify: (1) quantity, (2) name, (3) length.

**Example:**

120, T16 Pipe Knee Braces, 10'-6" long.

## T17 Swivel Coupler

The Dayton Superior T17 Swivel Coupler is designed to attach standard 1-1/2" diameter knee braces to 2" or 2-1/2" diameter wall braces.



T17 Swivel Coupler

**To Order:**

Specify: (1) quantity, (2) name, (3) wall brace diameter.

**Example:**

120, T17 Swivel Couplers for 2" wall braces.

## Brace Length and Axial Working Loads

Bracing Information

B1 On-Site Pipe Brace				
D	W	F	B	Axial Safe Working Load
				Without Knee Bracing
9'-0"	6'-0"	4'-6"	7'-6"	6,500 lbs
9'-6"	6'-5"	4'-9"	7'-11"	6,500 lbs
10'-0"	6'-8"	5'-0"	8'-4"	6,500 lbs
10'-6"	7'-0"	5'-3"	8'-9"	6,500 lbs

B2 Regular Pipe Brace					
D	W	F	B	Axial Safe Working Load	
				Without Knee Bracing	With Knee Bracing
16'-0"	10'-8"	8'-0"	13'-4"	5,800 lbs	6,500 lbs
17'-0"	11'-4"	8'-6"	14'-2"	4,800 lbs	6,500 lbs
18'-0"	12'-0"	9'-0"	15'-0"	4,200 lbs	6,500 lbs
19'-0"	12'-8"	9'-6"	15'-10"	3,550 lbs	6,500 lbs
20'-0"	13'-5"	10'-0"	16'-7"	3,150 lbs	6,500 lbs
21'-0"	14'-1"	10'-6"	17'-5"	2,800 lbs	6,500 lbs
22'-0"	14'-9"	11'-0"	18'-2"	2,500 lbs	6,500 lbs
23'-0"	15'-5"	11'-6"	19'-0"	2,275 lbs	6,500 lbs
24'-0"	16'-1"	12'-0"	19'-11"	1,975 lbs	6,925 lbs

**Note:** Depending on panel thickness and height, a double mat of reinforcing steel may be required to resist the bending stresses of temporary wind loads.

SWL provides a minimum factor of safety of 1.5 to 1.

**Danger!** With Knee Bracing means that knee, lateral and end bracing must be installed in order to obtain SWL's shown.

## Brace Length and Safe Working Loads

B4 Heavy Duty Regular Pipe Brace					
D	W	F	B	Axial Safe Working Load	
				Without Knee Bracing	With Knee Bracing
18'-0"	12'-0"	9'-0"	15'-0"	6,500 lbs	6,500 lbs
19'-0"	12'-8"	9'-6"	15'-10"	6,500 lbs	6,500 lbs
20'-0"	13'-4"	10'-0"	16'-8"	6,500 lbs	6,500 lbs
21'-0"	14'-0"	10'-6"	17'-6"	5,925 lbs	6,500 lbs
22'-0"	14'-8"	11'-0"	18'-4"	4,800 lbs	6,500 lbs
23'-0"	15'-4"	11'-6"	19'-2"	3,925 lbs	6,500 lbs
24'-0"	16'-0"	12'-0"	20'-0"	3,575 lbs	6,500 lbs
25'-0"	16'-8"	12'-6"	20'-10"	2,975 lbs	6,500 lbs
26'-0"	17'-4"	13'-0"	21'-8"	2,500 lbs	6,500 lbs
27'-0"	18'-0"	13'-6"	22'-6"	2,275 lbs	6,500 lbs
28'-0"	18'-8"	14'-0"	23'-4"	1,950 lbs	6,500 lbs

**Note:** Depending on panel thickness and height, a double mat of reinforcing steel may be required to resist the bending stresses of temporary wind loads. SWL provides a minimum factor of safety of 1.5 to 1.

**Danger!** With Knee Bracing means that knee, lateral and end bracing must be installed in order to obtain SWL's shown.

B5 Heavy Duty Long Pipe Brace					
D	W	F	B	Axial Safe Working Load	
				Without Knee Bracing	With Knee Bracing
27'-0"	18'-0"	13'-6"	22'-6"	5,975 lbs	6,500 lbs
28'-0"	18'-8"	14'-0"	23'-4"	5,325 lbs	6,500 lbs
29'-0"	19'-4"	14'-6"	24'-2"	4,800 lbs	6,500 lbs
30'-0"	20'-0"	15'-0"	25'-0"	4,250 lbs	6,500 lbs
31'-0"	20'-8"	15'-6"	26'-10"	3,450 lbs	6,500 lbs
32'-0"	21'-4"	16'-0"	26'-8"	2,825 lbs	6,500 lbs
33'-0"	22'-0"	16'-6"	27'-6"	2,550 lbs	6,500 lbs
34'-0"	22'-8"	17'-0"	28'-4"	2,100 lbs	6,500 lbs
35'-0"	23'-4"	17'-6"	29'-2"	1,750 lbs	6,500 lbs
36'-0"	24'-0"	18'-0"	30'-0"	1,600 lbs	6,500 lbs
37'-0"	24'-8"	18'-6"	30'-10"	1,350 lbs	6,500 lbs
38'-0"	25'-4"	19'-0"	31'-8"	Not Recommended	6,300 lbs
39'-0"	26'-0"	19'-6"	32'-6"	Not Recommended	6,000 lbs
40'-0"	26'-8"	20'-0"	33'-4"	Not Recommended	5,600 lbs
41'-0"	27'-4"	20'-6"	34'-2"	Not Recommended	5,200 lbs
42'-0"	28'-0"	21'-0"	35'-0"	Not Recommended	5,000 lbs
43'-0"	28'-8"	21'-6"	35'-10"	Not Recommended	4,650 lbs
44'-0"	29'-4"	22'-0"	36'-8"	Not Recommended	4,325 lbs
45'-0"	30'-0"	22'-6"	37'-6"	Not Recommended	4,175 lbs
46'-0"	30'-8"	23'-0"	38'-4"	Not Recommended	3,900 lbs
47'-0"	31'-4"	23'-6"	39'-0"	Not Recommended	3,775 lbs

**Note:** Depending on panel thickness and height, a double mat of reinforcing steel may be required to resist the bending stresses of temporary wind loads. SWL provides a minimum factor of safety of 1.5 to 1.

**Danger!** With Knee Bracing means that knee, lateral and end bracing must be installed in order to obtain SWL's shown.

Bracing Information



## Brace Length and Safe Working Loads (continued)

B6 Short Pipe Brace				
D	W	F	B	Axial Safe Working Load
				Without Knee Bracing
12'-0"	8'-0"	6'-0"	10'-0"	6,500 lbs
13'-0"	8'-9"	6'-6"	10'-9"	6,450 lbs
14'-0"	9'-6"	7'-0"	11'-8"	5,225 lbs
15'-0"	10'-0"	7'-6"	12'-5"	4,450 lbs
16'-0"	10'-9"	8'-0"	13'-3"	3,750 lbs

**Note:** Depending on panel thickness and height, a double mat of reinforcing steel may be required to resist the bending stresses of temporary wind loads. SWL provides a minimum factor of safety of 1.5 to 1.

Jumbo Pipe Braces					
Type	D	W	F	B	Axial Safe Working Load Without Knee, Lateral and End Bracing
B7	15'-0" to 24'-0"	13'-6"	10'-3"	17'-0"	6,500 lbs
B8	19'-0" to 31'-0"	17'-6"	13'-3"	22'-0"	6,500 lbs
B9	23'-0" to 39'-0"	21'-6"	16'-3"	27'-0"	4,800 lbs
B10	27'-0" to 46'-0"	25'-6"	19'-3"	32'-0"	3,600 lbs
B11	22'-0"	20'-5"	15'-4"	25'-6" Min.	9,000 lbs
B11	58'-0"	32'-0"	24'-0"	40'-0" Max.	9,000 lbs
B12	27'-0" to 46'-0"	25'-6"	19'-3"	32'-0"	9,000 lbs
B14	35'-0" to 60'-0"	33'-6"	25'-3"	42'-0"	5,200 lbs
B15	43'-0" to 60'-0"	41'-6"	31'-3"	52'-0"	3,800 lbs
B16	42'-0"	28'-9"	21'-8"	37'-0"	8,000 lbs
B17	35'-0" to 60'-0"	33'-6"	25'-3"	42'-0"	12,000 lbs
B18	43'-0" to 60'-0"	41'-6"	31'-3"	52'-0"	12,000 lbs

**Note:** Depending on panel thickness and height, a double mat of reinforcing steel may be required to resist the bending stresses of temporary wind loads. SWL provides a minimum factor of safety of 1.5 to 1.

**Note!** When calculating maximum brace spacing always compare the selected brace safe working load with the maximum brace load that can be safely carried by the brace anchor.