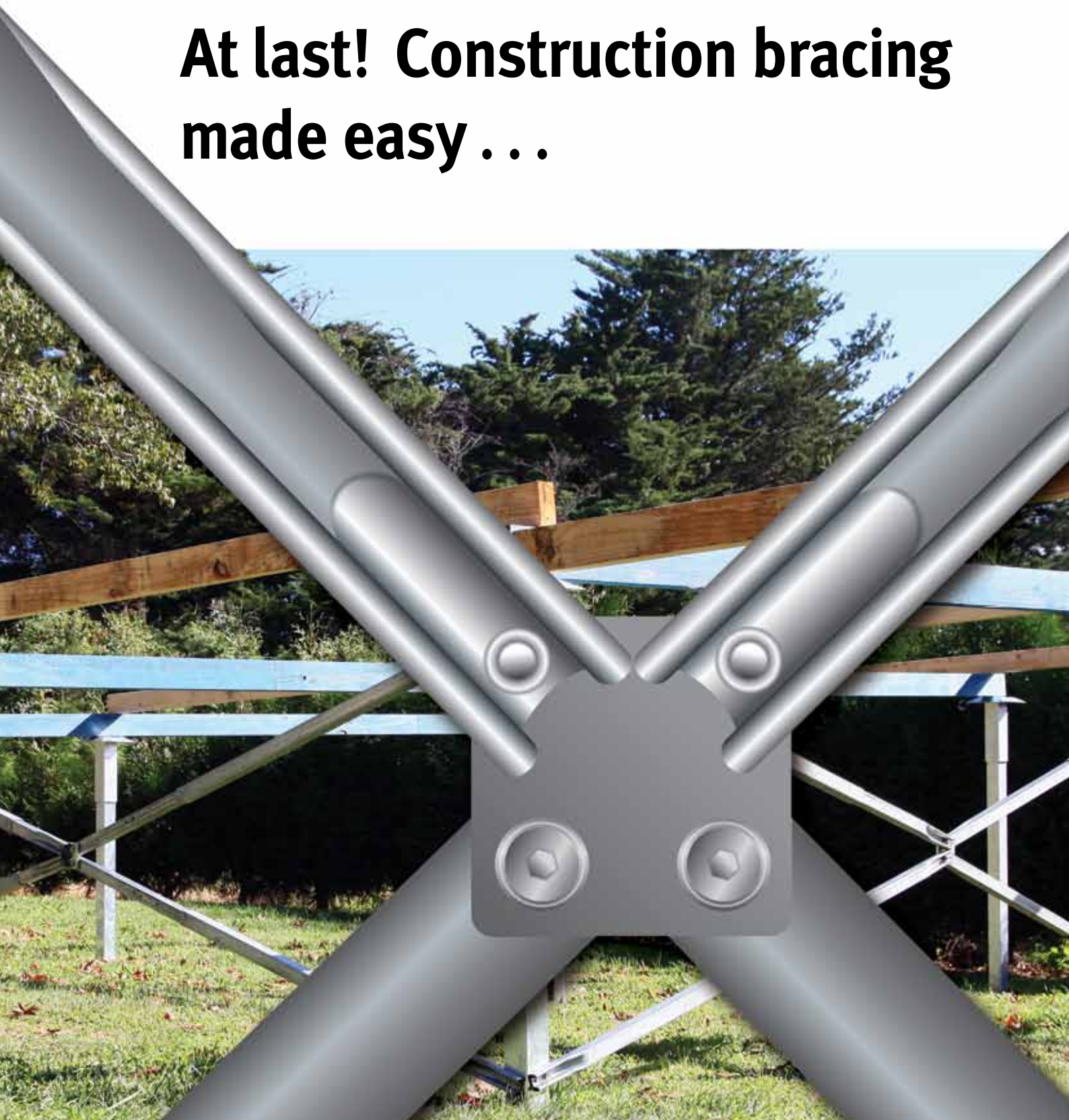


**Uni-Brace<sup>®</sup>**

UNIQUE BRACING SYSTEM

**At last! Construction bracing  
made easy . . .**



**. . . a fast, smart and simple system  
with a range of applications**

There are many situations in building with a need for the bracing of walls and floors.

Often the bracing capacity actually required is not fully considered, unless it has been properly designed. The potential result can be failure, if the allowance is inadequate, or, if "over designed" the result can be sheer waste. Uni-Brace<sup>®</sup> is fully engineered in accordance with the Design Assumptions that are included as part of this brochure.

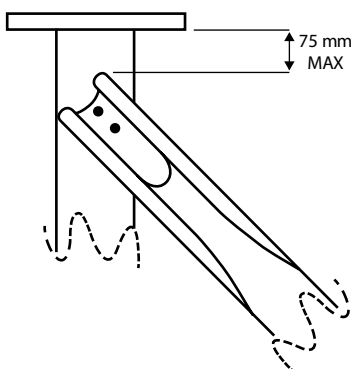
Uni-Brace<sup>®</sup> was also developed to make installation easy and, at the same time, provide a smart finished appearance.

The unique telescopic design of Uni-Brace<sup>®</sup> also combines the benefits of lightweight design as well as the ability to sustain normal loads.

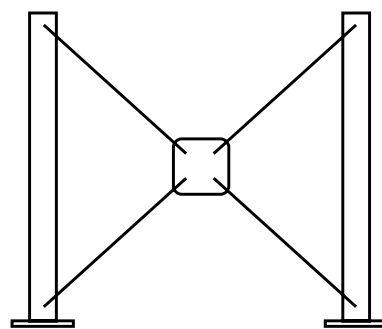
Uni-Brace<sup>®</sup> comes complete. All you need to do when installing is open the telescopic parts as required and secure with metal self-drilling and tapping Tek screws. The system is screw fixed to the parts of the structure being braced. The pre-installed bolts in the centre assembly are then tightened.

The only tools required are a drill, with driver bits capable of installing 14#20-22 self-drilling and tapping metal Tek screws into steel, and clamps to hold the Uni-Brace<sup>®</sup> in position during installation.

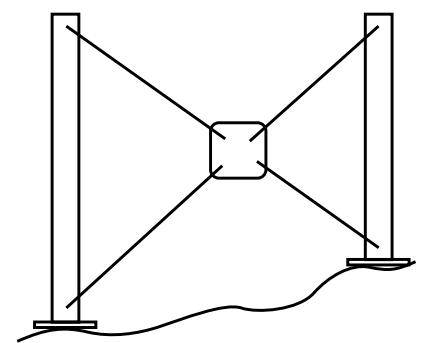
It's that easy!



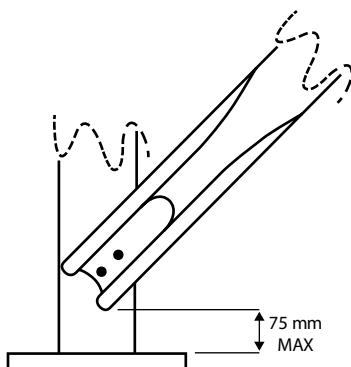
Uni-Brace<sup>®</sup> Top Connection



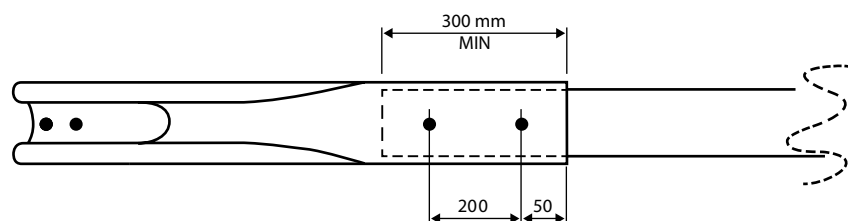
Uni-Brace<sup>®</sup> layout on even ground.



Uni-Brace<sup>®</sup> layout on uneven ground.



Uni-Brace<sup>®</sup> Bottom Connection



Minimum overlaps of diagonals and location of metal Tek screws

## FEATURES AND BENEFITS OF UNI-BRACE<sup>®</sup>

- Telescopic Diagonals  
Easy to adjust to required span
- Non-Symmetrical Design  
Can be sloping sites where posts to be braced are different in height
- Galvanised Finish \*  
Suitable to use in most environments
- Full Bracing Effect  
Works in Compression and Tension
- No Cutting  
No waste
- Lightweight  
Easy on site handling and installation

\* Adjustable Uni-Brace components are manufactured from Supagal<sup>®</sup> ERW Steel Tube to AS/NZS 1163:2009 C350L0.

The tables below apply for cross bracing between stumps, such as Uni-Pier and steel posts up to 3.6 metres in height and a maximum spacing of 4.8 metres. Uni-Braces<sup>®</sup> are available in four nominal sizes from 900mm to 1800mm.

### UNI-BRACE<sup>®</sup> PRODUCT RANGE

From the measurement taken in Step 1 choose the Uni-Brace<sup>®</sup> required (eg diagonal measurement of 2450mm would require UBR12).

	UBR9	UBR12	UBR15	UBR18
Nominal Supplied Length	900mm	1200mm	1500mm	1800mm
Minimum Extension	1640mm	1940mm	2240mm	2540mm
Maximum Extension	2100mm	3300mm	4500mm	5700mm

### UNI-BRACE<sup>®</sup> SELECTION TABLE

To further assist selection, the following table can also be used as a guide to determine Uni-Brace<sup>®</sup> size requirements. This table assumes that posts to be braced are on level ground and are the same height.

		MAXIMUM POST SPACING (GRID)													
		1.2	1.5	1.8	2.1	2.4	2.7	3.0	3.3	3.6	3.9	4.2	4.5	4.8	
MAXIMUM POST HEIGHT	0.6	N/A	N/A	UBR9	UBR12	UBR12	UBR12	UBR12	UBR15	UBR15	UBR15	UBR15	UBR15	UBR18	
	0.9	N/A	UBR9	UBR9	UBR12	UBR12	UBR12	UBR12	UBR15	UBR15	UBR15	UBR15	UBR18	UBR18	
	1.2	UBR9	UBR9	UBR12	UBR12	UBR12	UBR12	UBR12	UBR15	UBR15	UBR15	UBR15	UBR18	UBR18	
	1.5	UBR9	UBR9	UBR12	UBR12	UBR12	UBR12	UBR15	UBR15	UBR15	UBR15	UBR15	UBR18	UBR18	
	1.8	UBR12	UBR12	UBR12	UBR12	UBR12	UBR12	UBR15	UBR15	UBR15	UBR15	UBR18	UBR18	UBR18	
	2.1	UBR12	UBR12	UBR12	UBR12	UBR12	UBR15	UBR15	UBR15	UBR15	UBR15	UBR18	UBR18	UBR18	
	2.4	UBR12	UBR12	UBR12	UBR12	UBR15	UBR15	UBR15	UBR15	UBR15	UBR15	UBR18	UBR18	UBR18	
	2.7	UBR12	UBR12	UBR12	UBR15	UBR15	UBR15	UBR15	UBR15	UBR15	UBR18	UBR18	UBR18	UBR18	
	3.0	UBR12	UBR15	UBR15	UBR15	UBR15	UBR15	UBR15	UBR15	UBR18	UBR18	UBR18	UBR18	UBR18	
	3.3	UBR15	UBR15	UBR15	UBR15	UBR15	UBR15	UBR15	UBR18	UBR18	UBR18	UBR18	UBR18	N/A	
3.6	UBR15	UBR15	UBR15	UBR15	UBR15	UBR15	UBR18	UBR18	UBR18	UBR18	UBR18	N/A	N/A		

Allow to overlap post. Refer to Step 1.

### UNI-BRACE<sup>®</sup> QUANTITY TABLE

The following table is to determine the number of Uni-Braces<sup>®</sup> required on each grid, assuming a single storey house and a maximum roof pitch of 35 degrees. Ensure that correct wind classification is applied.

\* If unsure of wind classification consult a registered structural engineer.

Pier Spacing Grid Maximum	Wind Class* N1	Wind Class N2	Wind Class N3	Wind Class N4
2.0m	1 Uni-Brace <sup>®</sup> every 2nd row	1 Uni-Brace <sup>®</sup> every 2nd row	1 Uni-Brace <sup>®</sup> every row	1 Uni-Brace <sup>®</sup> every row
3.0m	1 Uni-Brace <sup>®</sup> every 2nd row	1 Uni-Brace <sup>®</sup> every row	1 Uni-Brace <sup>®</sup> every row	2 Uni-Braces <sup>®</sup> every row
4.0m	1 Uni-Brace <sup>®</sup> every row	1 Uni-Brace <sup>®</sup> every row	2 Uni-Braces <sup>®</sup> every row	2 Uni-Braces <sup>®</sup> every row
4.8m	1 Uni-Brace <sup>®</sup> every row	2 Uni-Braces <sup>®</sup> every row	2 Uni-Braces <sup>®</sup> every row	3 Uni-Braces <sup>®</sup> every row

NB: Bracing of Uni-Piers is not required in many situations where the base of a building is built with masonry walls.



**Step 1.** Check measure and note diagonal measurements making sure to allow for the lap of the Uni-Pier over the post. This is to determine the size of Uni-Brace<sup>®</sup> required.

Handy Hint: Uni-Brace<sup>®</sup> diagonals should extend to as close to the top and bottom of the post as possible. Select the Uni-Brace<sup>®</sup> from the table (Uni-Brace Span Table) in the Easy Selection Guide in this brochure.

**Step 2.** Open out the Uni-Brace<sup>®</sup> assembly on the ground in between the posts to be braced with the centre assembly positioned midway. Lift the top arm at one end and allow it to slide out to into position at the top of one of the posts. Affix with ONE only screw\* using one of the predrilled holes in the brace. Repeat to the top of the other post.

Handy Hint: Ensure that only one screw is fitted at this time to enable adjustment of the bracing assembly into position. Note also, if the extension arm happens to come apart from the assembly, it may be necessary to raise the centre assembly to assist with this step.

**Step 3.** With both top braces screwed into position with one screw\* on each side, extend the bottom arms to the base of the post and secure each with one screw\*.

Handy Hint: When lifting the centre assembly, the upper braces will retract and the bottom braces will extend further.

**Step 4.** With all four corners of the brace assembly now held in place lift and adjust the centre assembly so that the diagonals are as close to as straight alignment as possible. Ensure that no part of the WARNING label is visible. Once positioned, use a timber offcut placed vertically and resting on the ground and clamp it to the bracing. Screw the diagonal braces together as per the diagram using 14-20x22. A minimum of 2 screws to each brace must be used.

Handy Hint: It may be necessary to move the centre assembly both “up and down” as well as “sideways” “laterally” to achieve alignment.

**Step 5.** Install remaining screws\* into the posts using the pre-drilled holes.

**Step 6.** Finally, fully tighten the M8 bolts located on the centre connection plate using a hexagonal driver fitted to the drill.

Handy Hint: It may be necessary to hold the hexagonal nut firm with a ring spanner while the head of the bolt is mechanically tightened.



\* 14-20x22 to AS3566 Class 4 for steel and type 17, 14-10x65 AS3566 Class 4 for timber (use treated screws if required).



Screw fixing Uni-Brace® to top of post.



Affixing Uni-Brace® to a timber post.



Screwing diagonals together.



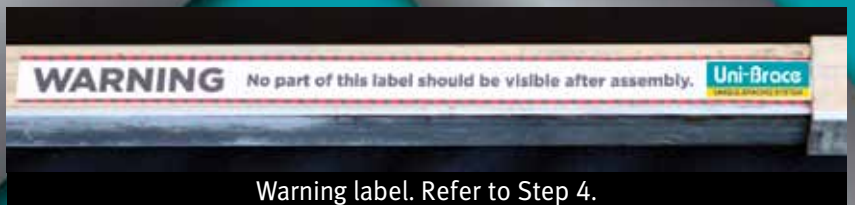
Uni-Brace® connections.



Adjusting the alignment of Uni-Brace® prior to final fixing.



Assembled Uni-Brace® packaged for delivery.



Warning label. Refer to Step 4.



- 1** Data is provided for five wind regions in four groups according to AS 4055-1992 as follows:

AS4055	Equivalent to:
N1	W28N permissible W34N limit state
N2	W33N permissible W40N limit state
N3	W41N permissible W50N limit state
N4 & C1	W50N & W41C permissible W61N & W50 limit state

- 2** Maximum height of posts or stumps is 3.6m.

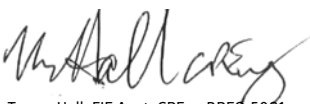
- 3** Height from ground floor level to highest point on roof should not exceed 5.5m.

- 4** Allowed Design Loads:

Dead load of floor	0.5 kPa
Live load of floor	1.5 kPa (for internal areas)
Live load of floor	3.0 kPa (for external areas eg. verandahs)
	Tile and Sheet roofs are considered
Live load on roof	0.25 kPa
Allowance made for stud walls lined with plasterboard	

- 5** Maximum roof pitch is 35 degrees.

I hereby certify that the Uni-Brace including its design tables, bracing details and connection details as well as other information contained, has been prepared in accordance with the relevant Australian Standards and the Building Code of Australia.



Trevor Hall, FIE Aust. CPEng RPEQ 5081  
**KNEEBONE, BERETTA & HALL PTY. LTD.**  
 Consulting Engineers

### CAUTION

Uni-Brace<sup>®</sup> is generally designed for residential applications, including roof and floor loads.

Where buildings have large "point loads" or where buildings are of an unusual structural design, Uni-Brace<sup>®</sup> recommend that advice be sought from a registered practising structural engineer. All screws and bolts used with Uni-Brace<sup>®</sup> must be mechanically tightened.

**If in doubt, always consult a registered practising structural engineer.**

This brochure was prepared to comply with the relevant Australian Standards and contains technical information for the design for flooring of residential structures and to be applied by a registered practising engineer. Uni-Pier Australia Pty Ltd reserves the right to revise or amend this manual without notice.

