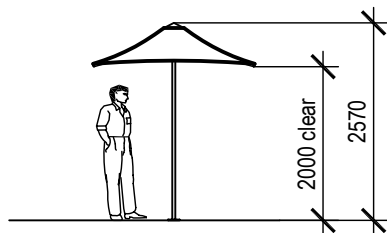


**Plan**  
1:100 at A4



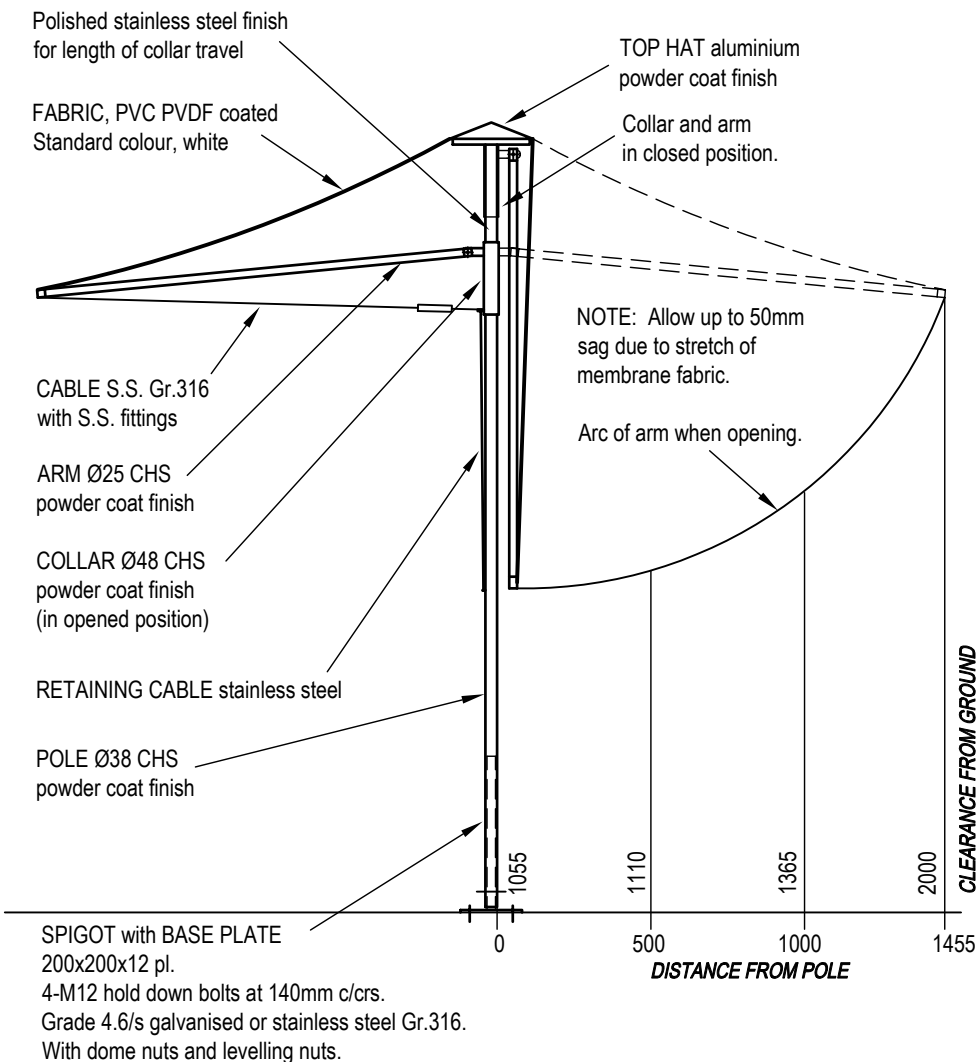
**Elevation**  
1:100 at A4

**PORTA SQUARE 2.1m**

Wind Rating: Not rated.  
Close up when wind exceeds 40 km/h  
Umbrella weight: 20kg  
Spigot weight: 3.1kg

Overall dimensions represent clearance dimensions for the complete umbrella.  
Membrane dimensions differ, depending on variations in tensioning and fabrication.

Dimensions are in millimetres.



OPENED POSITION

CLOSED POSITION

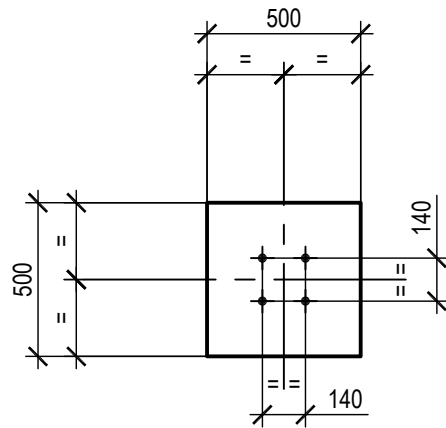
**2.1m Portable Series  
Square Umbrella  
Model SUA-P21**



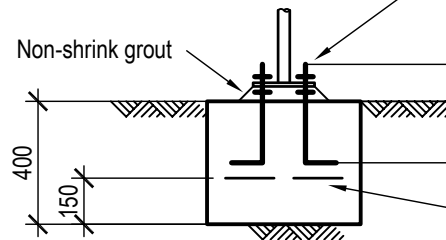
Portable Series  
Model: SUA-P21

Engineering Framing

**street  
umbrellas**  
Australia



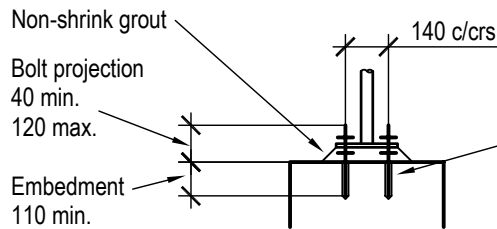
Plan



Elevation

- 4-M12 Gr.4.6/S galvanised H.D. bolts with nuts and levelling nuts
- Cog 100
- Bolt projection to suit level of top of paving, tiling, etc
- 40 min
- 120 max.
- 200 embedment (cast in)
- F82 fabric - 50 concrete side cover
- Natural Ground

## SUA-P21 - Pad Footing



## Chemical Anchor Detail

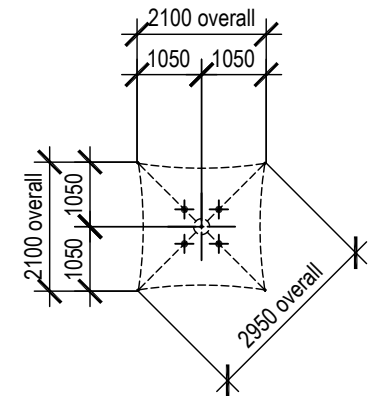
- 4-M12 H.D. bolts to be threaded rod grade 4.6/s hot dipped galvanised, or stainless steel Gr.316.
- Supplied with nuts, washers and levelling nuts.
- Chemical anchors, at 140 x 140 centres to be 'Hilti HVU', or engineer approved equivalent, and to be installed in accordance with the manufacturer's instructions. Hole to be clean and dry at time of installation.

**Notes:**  
Not wind rated.

Assumed soil conditions:  
Pad - bearing capacity 100kPa  
Pier -  $c_u=50$ kPa (stiff clay)

Minimum 60mm cover to all reinforcement  
Concrete grade to be N25  
20mm aggregate size  
Slump 65mm

- Anchor bolt location tolerances** per Australian Standard AS 4100-1990
- 3mm for anchor bolt centres within an anchor bolt group.
  - 6mm for adjacent anchor bolt group centres.
  - Maximum accumulation of 6mm per 30m not to exceed a total of 25mm.
  - 6mm from anchor bolt group centre to column line centre.

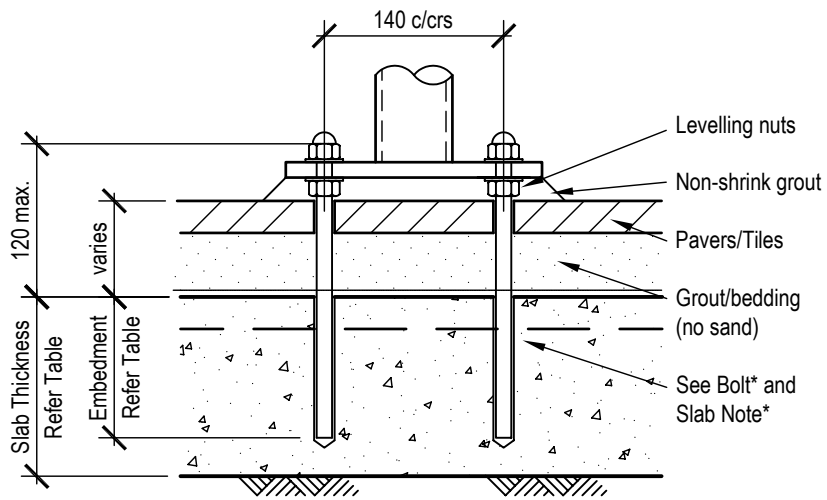


H.D. Bolt Layout Plan  
Not to scale

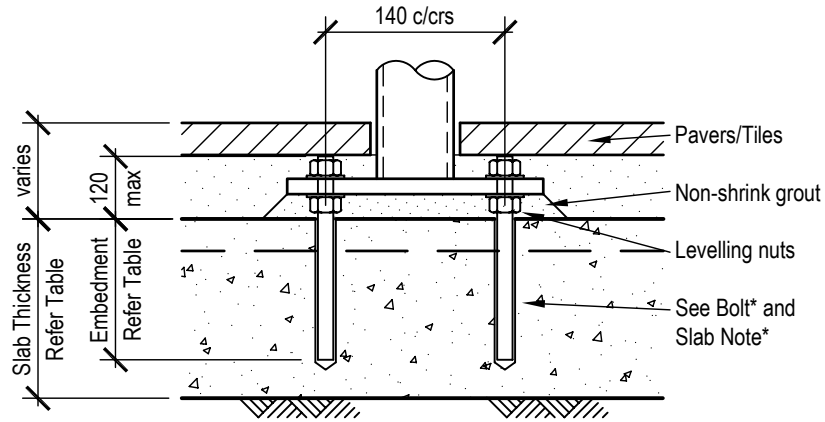
Portable Series  
Model: SUA-P21

Footing Detail

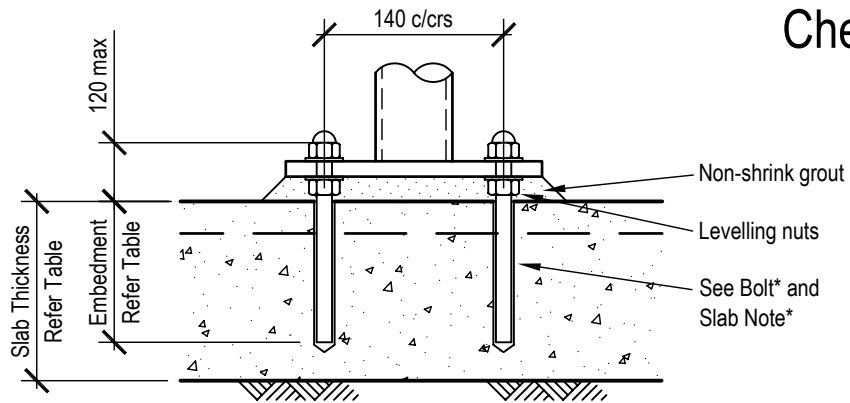
street  
umbrellas  
Australia



Over Pavers



Under Pavers



On Slab

## Chemical Anchor Fixing to Slab on Ground

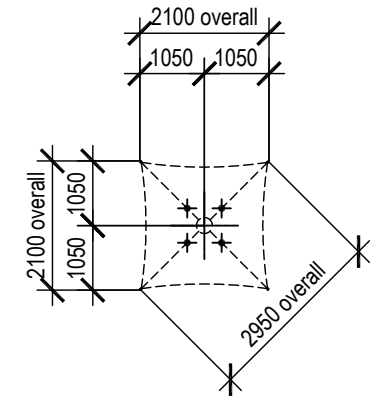
### \* H.D. BOLT NOTE

Structure pole has 200 x 200 x 12 base plate.  
4-M12 H.D. bolts to be threaded rod grade 4.6/s hot dipped galvanised, or stainless steel Gr.316. at 140 x 140 centres.

### \* SLAB ON GROUND NOTE

The existing reinforced concrete slab on ground is to be approved for adequacy by a Structural Engineer before installation. Concrete strength -  $f_c$  25MPa.  
Installation requires **1 sq m** of continuous reinforced slab with the pole centre 400mm minimum from a slab edge or control joint.

Contact a SUA Dealer if the slab does not meet any of the requirements.



H.D. Bolt Layout Plan  
Not to scale

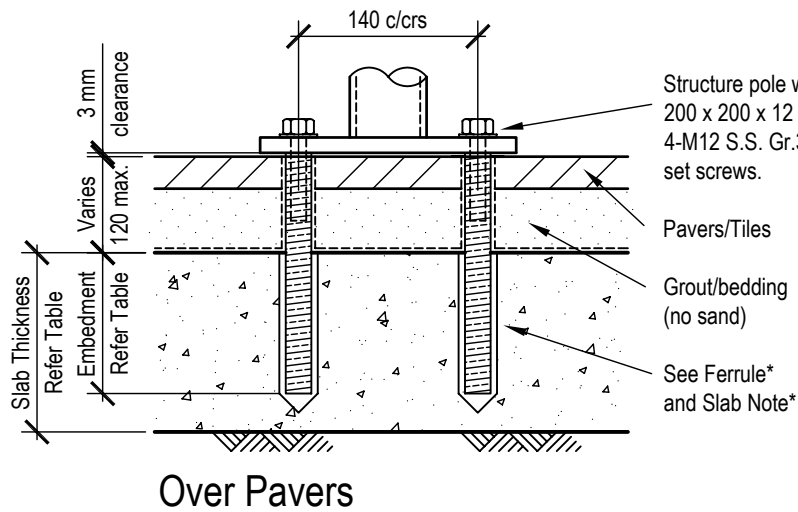
Slab Thickness	Chemical Anchor	Min. Embedment	H.D. Bolts*	Min. Slab Edge Distance*
100	Ramset Reo 502 (or Hilti HIT-RE 500)	80	4-M12 at 140 c/crs	400
110	Ramset Reo 502 (or Hilti HIT-RE 500)	90	4-M12 at 140 c/crs	400
120	Ramset Reo 502 (or Hilti HIT-RE 500)	100	4-M12 at 140 c/crs	400
130	Hilti HVU	110	4-M12 at 140 c/crs	400
140 plus	Hilti HVU	110	4-M12 at 140 c/crs	400

Chemical anchor to be as above or Engineer approved equivalent, and to be installed in accordance with the manufacturer's instructions.

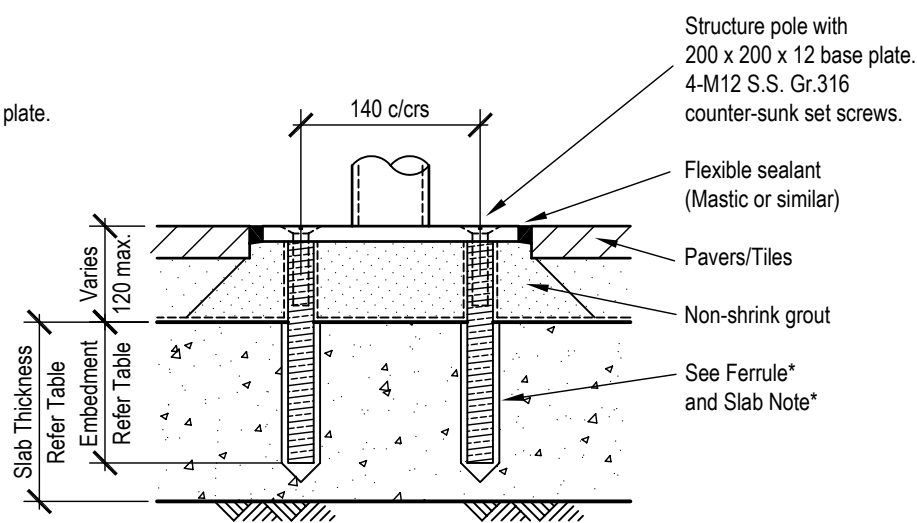
## Installation Detail - Model SUA-P21

Portable Series  
Model: SUA-P21  
Installation Detail

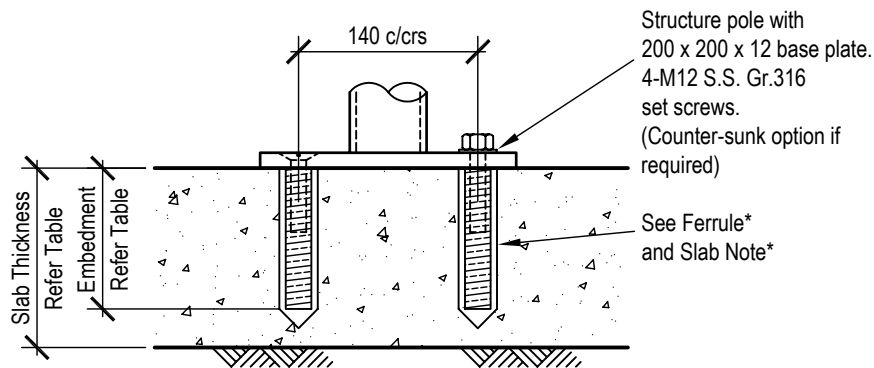
street  
umbrellas  
Australia



Over Pavers

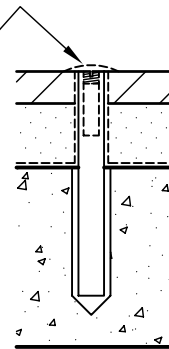


At Pavers

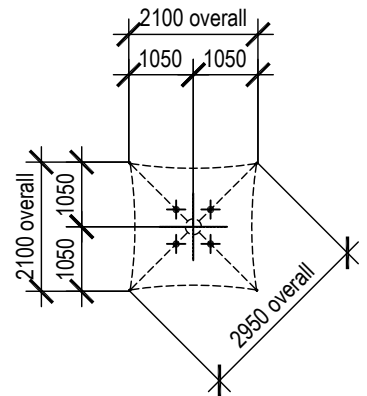


On Slab

Rubber grommets, stainless steel grub screws with hex socket or brass flat dome head screws, screwed into ferrule flush with paving to keep ferrule thread clean.



Ferrule Fixing with Umbrella Removed



H.D. Bolt Layout Plan  
Not to scale

## Chemical Anchor Fixing to Slab on Ground

Slab Thickness	Chemical Anchor	Min. Embedment	Ferrules*	Min. Slab Edge Distance*
100	Ramset Reo 502 (or Hilti HIT-RE 500)	80	4-M12 at 140 c/crs	400
110	Ramset Reo 502 (or Hilti HIT-RE 500)	90	4-M12 at 140 c/crs	400
120	Ramset Reo 502 (or Hilti HIT-RE 500)	100	4-M12 at 140 c/crs	400
130	Hilti HVU	110	4-M12 at 140 c/crs	400
140 plus	Hilti HVU	110	4-M12 at 140 c/crs	400

Chemical anchor to be as above or Engineer approved equivalent, and to be installed in accordance with the manufacturer's instructions.

## Ferrule Detail - Model SUA-P21

Portable Series  
Model: SUA-P21

Ferrule Fixing

street  
umbrellas  
Australia

\* **FERRULE NOTE**  
Ferrules at 140 x 140 centres are M20 stainless steel Gr.316 threaded rods tapped for M12.

\* **SLAB ON GROUND NOTE**  
The existing reinforced concrete slab on ground is to be approved for adequacy by a Structural Engineer before installation. Concrete strength -  $f'c$  25MPa. Installation requires **1 sq m** of continuous reinforced slab with the pole centre 400mm minimum from a slab edge or control joint. Contact a SUA Dealer if the slab does not meet any of the requirements.