

# U-PANEL

A SLEEPER LIKE NO OTHER



## U-Panel Retaining Wall System

[BENEFITS](#) | [USER GUIDE](#) | [SPECIFICATIONS](#) | [PRODUCT OPTIONS](#)

## Horizontal U-Panel Sleeper

### Lighter Stronger Better

The U-Panel Sleeper retaining wall system is an great choice for retaining walls in gardens, residential applications and commercial projects. The simplicity of the system, the lightweight per-sleeper and usage of recycled materials makes the U-Panel Sleeper retaining wall a smart choice for your next project.

#### Key Benefits:

- U-Panel Sleeper can be installed horizontally and verically.
- Environmentally friendly, over 50% of the raw materials are recycled (flyash).
- Lightweight, each panel is only 44kgs (2 man lift)
- Available in a range of textures and finishes, plus custom finishes are available.



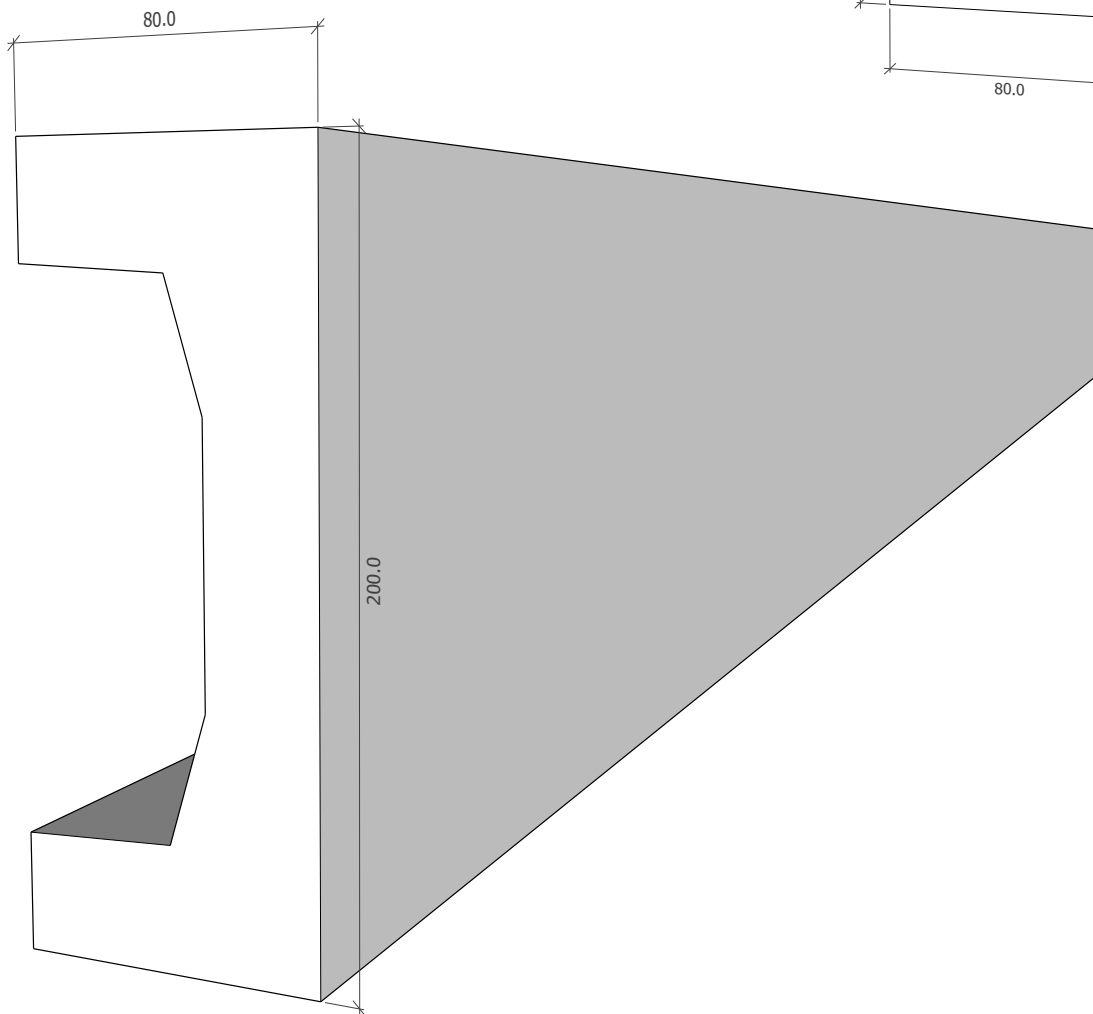
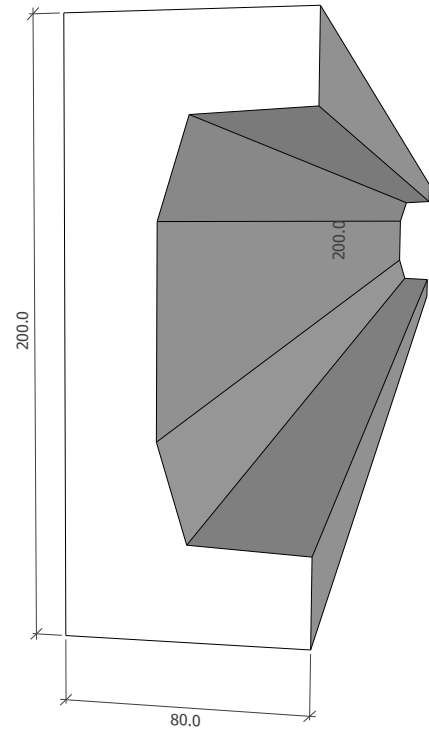
## U-Panel Sleeper Specifications

U-Panel Sleepers are made of fibre reinforced concrete  
each U-Panel Sleeper is 2400x200x80mm and weighs 44.4kgs.

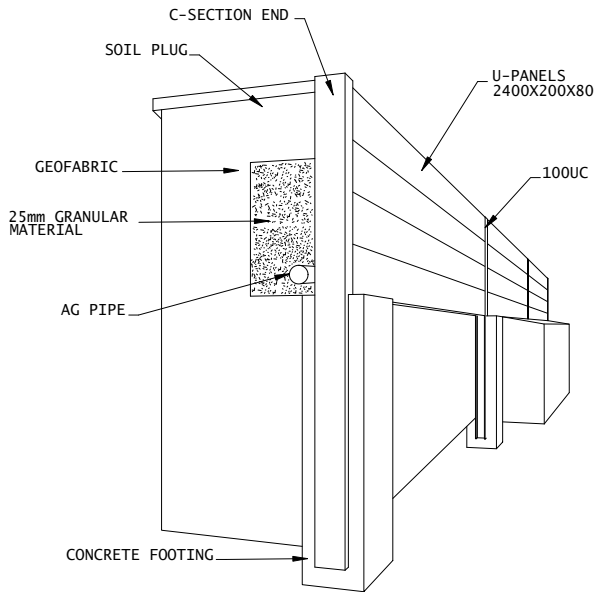
### All U-Sleepers are designed to:

- ✓ AS3600/2009
- ✓ AS4100
- ✓ AS1170.0.2002
- ✓ AS1170.1.2002

All sleepers are made from  
U-Crete geopolymer reduced  
CO<sub>2</sub> by over 60%



## U-Panel Sleeper Specifications

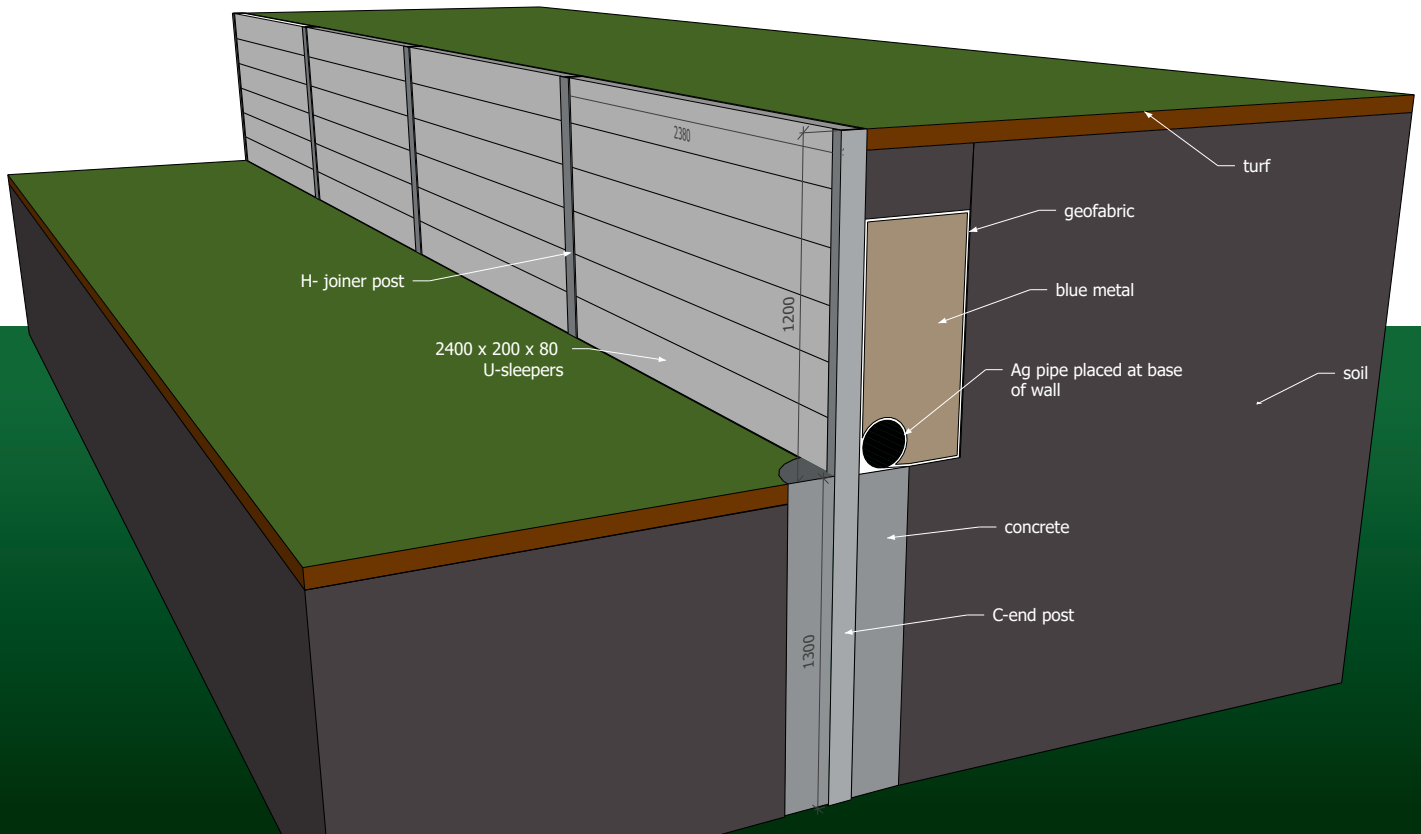


### SPECIFICATIONS FOR USE OF UPANEL SLEEPERS

1. THESE SLEEPERS ARE ONLY SUITABLE FOR USE WITH RETAINING WALL WHICH SATISFY THE FOLLOWING CONDITION/LIMITATIONS.
  - THE WALL IS NOT SUBJECT TO HEAVY SURCHARGE LOADS. FOR EXAMPLE, NEARBY EXISTING RETAINING WALLS, STRUCTURES OR BUILDINGS WITHIN A DISTANCE EQUAL TO TWO TIMES THE WALL HEIGHT.
  - THE FINAL SURFACE GRADIENT ABOVE THE WALL IS LEVEL OR ONLY SLIGHTLY LESS THAN 1 VERTICAL RISE IN 10 HORIZONTAL.
  - THE WALL BACKFILL IS FREE DRAINING, CONSISTING OF SAND & OR GRAVEL.
  - ALL SUB-SURFACE WATER IS DRAINED BY MEANS OF AN AGRICULTURAL DRAIN.
  - SLEEPERS ARE HANDLED WITH DUE CARE DURING TRANSPORT AND ERECTION.
  - SLEEPERS MINIMUM END BEARING LENGTH SHALL NOT BE LESS THAN 40mm EACH END.

|     |                         |          |  |           |       |  |
|-----|-------------------------|----------|--|-----------|-------|--|
|     |                         |          | STRUCAD  |           |       |  |
|     |                         |          | CLIENT:  | BY:       | DATE: | Suite 108<br>658 Pittwater Road<br>Brookvale, NSW 2100<br>Australia      |
|     |                         |          | PROJECT:   | CHECKED:  | CAD:  | 15/02/21   |
|     |                         |          | PROJECT:   | APPROVED: |       | Phone: (612) 9938 2399<br>Fax: (612) 8078 0210<br>Website: cadraw.com.au |
|     |                         |          | TITLE:   | SCALE:    | 1:10  | SHEET: A3  |
|     |                         |          | TITLE:   |           |       | 308 No.  |
|     |                         |          |  |           |       | DRG No. WD-401   |
|     |                         |          |  |           |       | REV. 0   |
| 0   | ISSUED FOR CONSTRUCTION | 15/02/21 | GENERAL NOTES<br>1. ALL CHANNELS/ANGLES TO BE ERECTED WITH DIRECTION OF FLANGES/LEGS AS INDICATED ON PLANS/ELEVATIONS.<br>2. ALL MEMBERS TO HAVE MARK END AS PER MARK BUBBLE ON PLANS/ELEVATIONS.<br>3. MARK END AS SHOWN ON FABRICATION DRAWING IS REPRESENTED BY LOCATION OF MARK BUBBLE. SEE DIAGRAM. |           |       |  |
| REV | REVISION DESCRIPTION    | DATE     | 100<br>MARK END  |           |       |  |

## 1.2m Retaining Wall Cut Through



## Benefits of using the U-Panel Sleeper (UPS) retaining walls compared to standard concrete sleepers (SCS)



### Cost

U-Sleepers are between 10% - 15% cheaper than others on the market. Cost savings also come in transport, being lighter enables more sqms on each truck. Installation is cheaper and safer not having heavy machinery on site to lift panels into place.



### Environmentally friendly

UPS - over 50% of the raw materials are recycled (flyash) and no sand or aggregate  
SCS - standard concrete with cement, sand, aggregate and steel re-bars



### Sqms to fit on a semi-trailer (under 20ton)

UPS - 220sqms (440 panels)  
SCS - 102sqms (214 panels)



### Durability

UPS - fibre re-enforced so no cracking and no steel re-bars to rust  
SCS - steel re-bar can rust if panel cracks



### Compressive strength

UPS - 66MPa  
SCS - 40MPa



### Weight

UPS - 2400x200x80 44kgs (2 man lift)  
SCS - 2400x200x80 94kgs (mechanical lift)

### Recommended U-Panel Sleeper Length to be used in retaining wall (m) with 5kPa surcharge

| Height of wall    | Soil Type               |          |          |              |
|-------------------|-------------------------|----------|----------|--------------|
|                   | Well drained (wet) clay | Dry Clay | Wet Clay | Gravely Clay |
| 1.2m (6 sleepers) | 2.4                     | 2.4      | 1.8      | 2            |
| 1m (5 sleepers)   | 2.4                     | 2.4      | 2        | 2.4          |
| 0.8m (4 sleepers) | 2.4                     | 2.4      | 2        | 2.4          |
| 0.6m (3 sleepers) | 2.4                     | 2.4      | 2.4      | 2.4          |

### Recommended retaining wall posts design with 5kPa surcharge (well drained wet clay)

| Height of wall    | Sleeper length | Post size | Post Spacing | Post Length |
|-------------------|----------------|-----------|--------------|-------------|
| 1.2m (6 sleepers) | 2.38           | UC100     | 2.4          | 2.5         |
| 1m (5 sleepers)   | 2.38           | UC100     | 2.4          | 2.2         |
| 0.8m (4 sleepers) | 2.38           | UC100     | 2.4          | 1.8         |
| 0.6m (3 sleepers) | 2.38           | UC100     | 2.4          | 1.5         |

## Specifications and Limitations

**Sleepers are engineered for retaining walls 1.2m high with the following conditions:**

- Back wall is free for drainage consisting of sand and or gravel.
- All sub surface water is drained by means of an agricultural drain or other suitable method.
- Sleepers are handled with care during transportation and erection on site.
- No compaction of back fill is allowed within a distance of 75% of the wall height.
- Walls over 1 metre will require council permission and engineers specifications.



**All U-Sleepers are designed to:**

- ✓ AS3600/2009
- ✓ AS4100
- ✓ AS1170.0.2002
- ✓ AS1170.1.2002

All Concrete Sleepers are 66MPa  
which Complies with AS3600/2009

## Vertical U-Panel Sleeper Specifications

Vertical panels concrete core filled with steel re-enforcement

Max Height – 2.7m

Panel weight 38kg (2 man lift) 66mpa fibre reinforced

No Scaffold required

Fast install

Custom patterns available on request



Top View



## Benefits of using U-Panel Sleeper (UPS) retaining walls compared to core filled blockwork (CFB).



### Speed of build

UPS - 80 sqm per day (3 labourers)  
CFB - 23 sqm per day (2 bricklayers and 1 labourer)



### Weather delays

UPS - dry fit, can be installed in any weather conditions  
CFB - wet trade, weather days can also flow on from previous job delays



### Labour needed

UPS - Low skilled labour (non skilled)  
CFB - experienced tradesman in brick/block laying



### Environmentally friendly

UPS - over 55% of the raw materials are recycled (flyash) and no sand or aggregate. Naturally cured.  
CFB - sand, cement, aggregate and varied amounts of flyash. 20% - 40% blocks need to be steam cured



### Work on site

UPS - all panels are dry fit and cut to size so no mess  
CFB - (Plain blocks) need mortar and render, both are extremely messy on site.  
CFB - (Patterned/coloured blocks) still require mortar

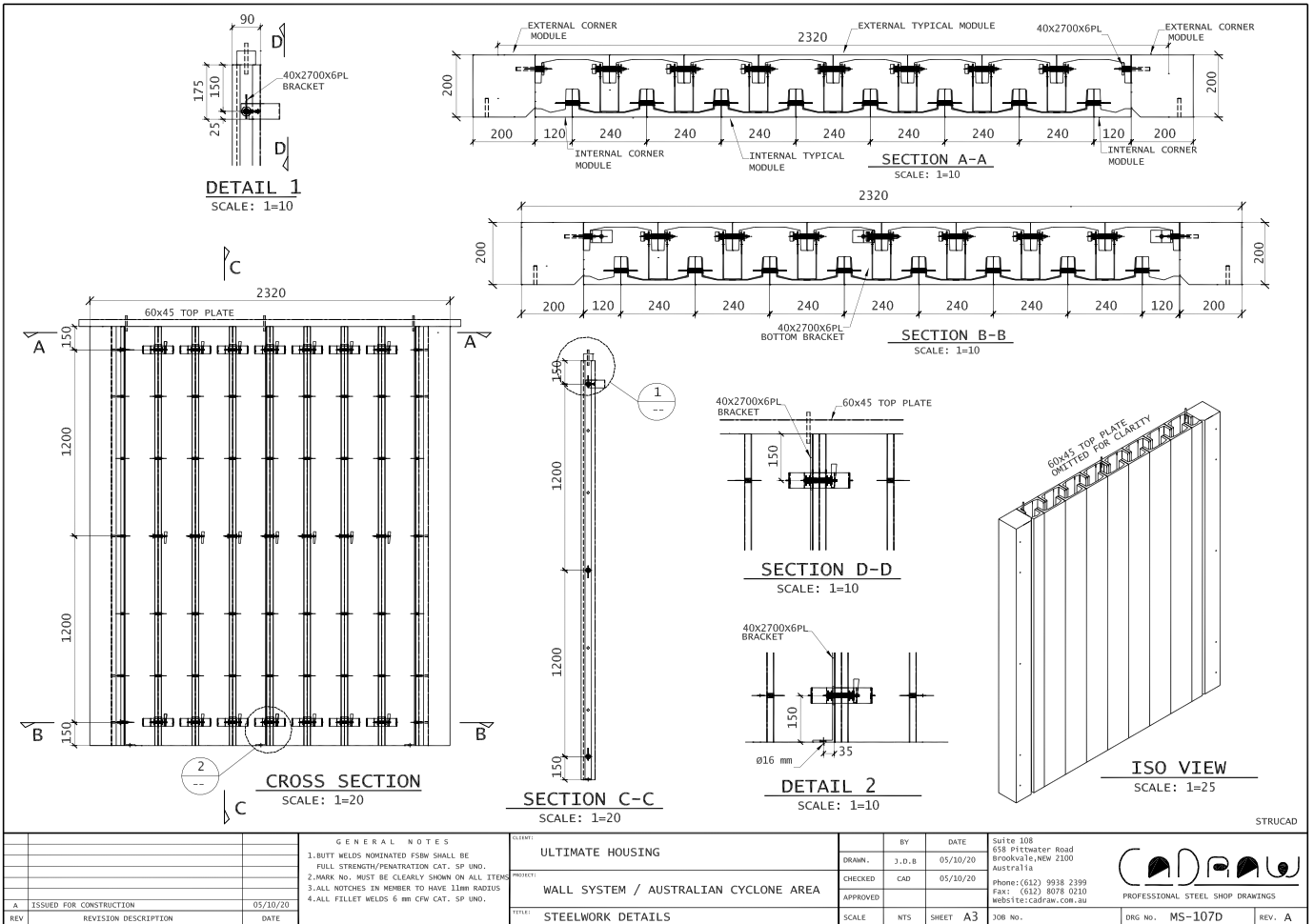




## Core Filled Walls

Drawing of 200mm wide retaining wall system.

Engineer to specify starter bars and steel reinforcement to suit job required.



## U-Panel Sleeper Finishes (Classic Range)

U-Panel Sleepers are available in 3 popular finish options.

### Special orders have the freedom to choose:



- ✓ Any custom pattern required.
- ✓ Any colours can be chosen as are applied after.



**Raw Smooth Concrete**



**Natural Timber Grain**

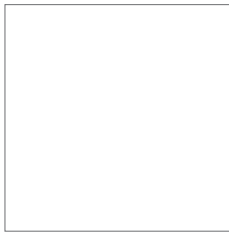


**Timber Grain with Groove**

## U-Panel Sleeper Colours (Classic Range)

U-Panel Sleepers have been intentionally left raw so you can colour it your way. We recommend the Dulux Avista Range:

### COLOUR TINT RANGE



**WHITE**  
FD200565-1L



**CREAM**  
FD200661-1L



**SANDY BEIGE**  
FD200658-1L



**MERINO**  
FD200656-1L



**LITE MOCHA**  
FD200646-1L



**LIGHT TERRACOTTA**  
FD200655-1L



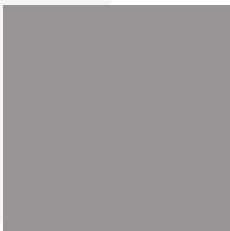
**DARK TERRACOTTA**  
FD200652-1L



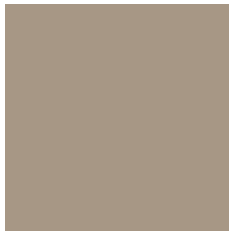
**BRICK RED**  
FD200648-1L



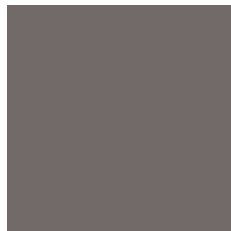
**BLUEGUM**  
FD200672-1L



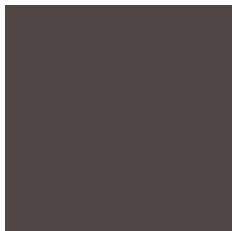
**FRENCH GREY**  
FD200654-1L  
FD278062-10L\*



**SILVER SANDS**  
FD200662-1L



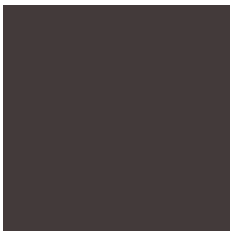
**SLATE GREY**  
FD200671-1L



**GUNMETAL**  
FD200664-1L



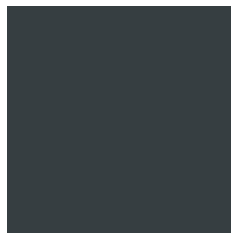
**NEW BLUESTONE**  
FD200561-1L  
FD278061-10L\*



**CHARCOAL**  
FD200666-1L  
FD278060-10L\*



**JET BLACK**  
FD200667-1L



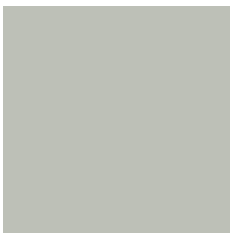
**MONUMENT®**  
FD200560-1L



**PAPERBARK®**  
FD200564-1L



**WOODLAND GREY®**  
FD200562-1L



**SHALE GREY™**  
FD200563-1L

\*Dulux Avista Coloured Sealer 10L is pre-tinted.

Colours shown in this brochure are intended as a guide only and are based on Dulux Avista 1L Colour Tint being mixed into Dulux Avista 19L Tintable base. Variations in colour may also occur depending on the job conditions, surface texture and finishing practices employed by your applicator.

Customer Service 1800 801 108

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™ colour names are also trade marks of BlueScope Steel Limited.

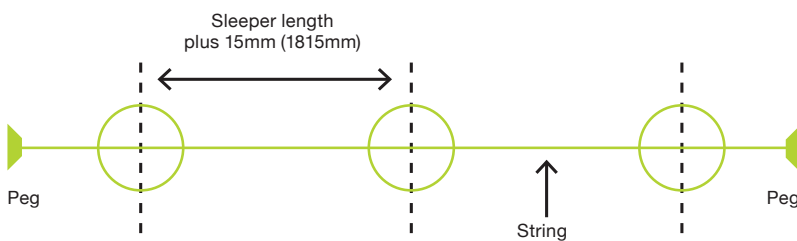


## Assembly and Installation

U-Panel Sleepers are installed just like timber retaining walls using steel posts, here's a guide:

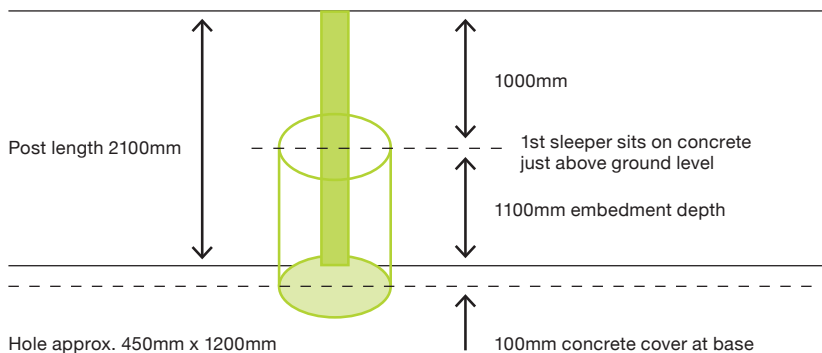
### STEP 1: Setup

Use a string line to ensure correct alignment and set pegs about 500mm from the ends of the retaining wall.



### STEP 2: Post Holes

The post holes into which the retaining wall posts will be placed shall be 450mm diameter with minimum 100mm concrete cover below the post. Footing depth is typically equal to the height of the retaining wall. For this example, therefore, the post hole is 1200mm.



### STEP 3: Alignment & Concrete

Once the holes are ready, place post and align with a spirit level. Fix a timber guide rail along the string line to ensure the concrete levels are all equal. The timber rail guide can also be used to stabilise the retaining wall post during concrete pouring.

Pour concrete into holes and level.



## Assembly and Installation (Continued)

### STEP 4: Installing Sleepers

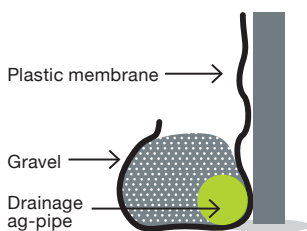
After the concrete has cured, place the first sleeper and check alignment. Packing material may be required to ensure the sleeper is level. The first sleeper rests on the concrete surface slightly above ground level.

The remaining sleepers can now be added.



### STEP 5: Drainage & Backfill

Place non woven geotextile fabric or a plastic waterproof membrane material behind the retaining wall. Position the ag-pipe at the bottom of the wall and fill with gravel to approx. 300mm deep to allow for drainage.



### STEP 6: Caution

Although timber sleepers are designed to retain the soil load behind the wall, they are not designed to take extra loads due to placement of machinery or heavy equipment directly behind the wall. It is recommended that no additional loads be placed within 1m of the wall edge.

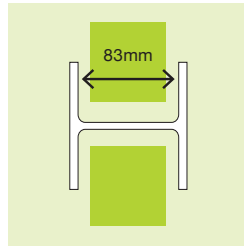
NOTE: The information in this publication is provided for use as a GUIDE ONLY. Except to the extent that responsibility cannot lawfully be excluded, NEPEAN Building & Infrastructure ("NB&I") does not accept responsibility for any loss or damage of any kind however arising in connection with the selection and use of Galintel® Retaining Wall Post. NB&I recommends that local council building requirements and professional advice be sought in the selection and use of Galintel® Retaining Wall Post.

## Retaining Wall Posts

100mm series to suit U-Panel

Hot-Dip galvanised to comply with AS/NZS4680

### H-Section Joiner Post

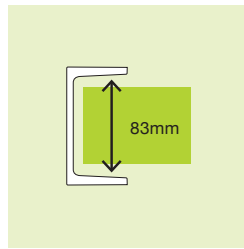


Available standard length range – 100mm Series:

| (m)       | 0.9 | 1.2 | 1.5 | 1.8 | 2.1 | 2.4 | 2.7 | 3.0 | 3.3 | 3.6 |
|-----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| H-Section | ✓   | ✓   | ✓   | ✓   | ✓   | ✓   | ✓   | ✓   | ✓   | ✓   |

Steel weight guide: 14.8kg/m

### C-Section End Post

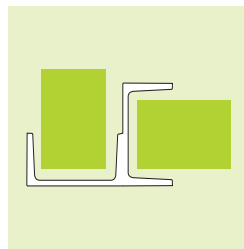


Available standard length range – 100mm Series:

| (m)       | 0.9 | 1.2 | 1.5 | 1.8 | 2.1 | 2.4 | 2.7 | 3.0 | 3.3 | 3.6 |
|-----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| C-Section | ✓   | ✓   | ✓   | ✓   | ✓   | ✓   | ✓   | ✓   | ✓   | ✓   |

Steel weight guide: 8.33kg/m

### 90° Corner Post



Available standard length range – 100mm Series:

| (m)        | 0.9 | 1.2 | 1.5 | 1.8 | 2.1 | 2.4 | 2.7 | 3.0 |
|------------|-----|-----|-----|-----|-----|-----|-----|-----|
| 90° Joiner | ✓   | ✓   | ✓   | ✓   | ✓   | ✓   | ✓   | ✓   |

Steel weight guide: 17kg/m

### 45° Corner Post



Available standard length range – 100mm Series:

| (m)        | 0.9 | 1.2 | 1.5 | 1.8 | 2.1 | 2.4 | 2.7 | 3.0 |
|------------|-----|-----|-----|-----|-----|-----|-----|-----|
| 45° Joiner | ✓   | ✓   | ✓   | ✓   | ✓   | ✓   | ✓   | ✓   |

Steel weight guide: 20kg/m

## Retaining Fence Brackets

Galintel® Fence Brackets are designed specifically to join timber and steel fence posts to Galintel Retaining Wall Posts.

Their universal design makes it suitable for both 100mm & 150mm Series Galintel Retaining Wall Posts, providing easy installation when constructing timber and steel fencing on top of retaining walls.

### Timber Fence Bracket



**Available range:**

Available in 6mm for timber fence posts

**Suits:** H Post, C Post, 90° Corner Post, and 45° Corner Post

**Code:** RWPFBHDT

**Nut, bolt and washer included**

### Steel Fence Standard Bracket



**Available range:**

Available in 6mm for steel fence posts

**Suits:** H Post, C Post, 90° Corner Post, and 45° Corner Post

**Code:** RWPFBFS

**Nut, bolt and washer included**

### Steel Fence Offset Bracket



**Available range:**

Available in 6mm for steel fence posts

**Suits:** 90° Corner Post

**Code:** RWPFBFS90

**Nut, bolt and washer included**



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**For more information  
contact your local retailer.**

