Non-structural retaining wall

Because each retaining wall is different with a wide range of variables, it is a good idea to look at the following information to determine what methods will achieve the best results.

Did you know?

- Unless stamped with a structural rating (like F7) all treated pine sleepers are only garden grade and are not suitable for walls over 1 metre high. (this may be less with some councils)
- **For engineered walls Ecowood F7 Kiln Dried sleepers are available from all Ecowood suppliers.**
- Any structure over 1 metre will need to be designed by a qualified engineer and will most likely require council approval and permits.
- All treated pine that has been cut, drilled, dressed or notched must be resealed with and appropriate product like ECOseal ™
- Walls exceeding 400mm will require appropriate drainage to a stormwater drain.
- Plastic lining should not be used because it may cause water build up and wall collapse.

Construction Tips

- Check with your local council to see if you will require a permit or approval.
- Check the type of soil and slope of the ground. Firm natural ground with a slope no more than 1:6. If there is poor soil conditions or the slope exceeds 1:6 a special design and council approval may be required.
- Forces on the proposed wall such as increased slope in backfill, temporary loads such as dumped building materials, heavy vehicles and permanent structures like pools or building foundations need to be taken into account. Special design and approval may be required even if the wall is less than 1 metre.
- Check the area is free of services like water, gas or electrical. (Dial Before You Dig - ph:1100 or www.1100.com.au)
- A 5° inward angle is recommended to counteract the natural forces working against the wall.
- Posts should be concreted into the ground at least to the height of the retaining wall. e.g. a 800mm high wall posts should be a minimum of 800mm in the ground
- At the base of the wall run a 100mm AGI pipe with a Geo-Tech fabric sock (to prevent clogging) running to a suitable stormwater point.
- 300mm of scoria over the AGI pipe to assist with drainage.
- If using timber upright posts bitumen paint should be applied to the material going in the ground. Also cut and reseal the top of the post on a slight angle to help with water runoff.
- Bitumen paint applied to the back and edged of the timber is recommended to provide an extra barrier against water and wet soil.
- Backfill should be free flowing such as gravel or sand. Backfill of heavy clay will swell in wet conditions and may cause failure due to excess pressure and poor drainage.

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General non-structural wall diagram

One of the most common methods of construction is with the use of galvanised "H & C" section steel posts with the sleepers inserted into the steel section. See fig 1

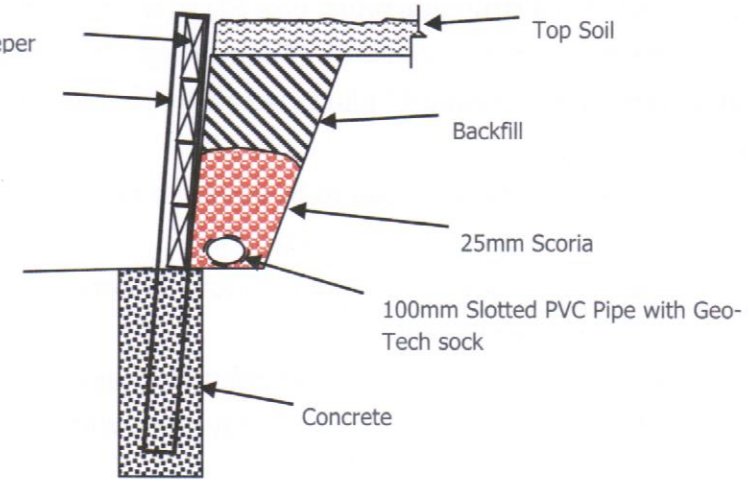
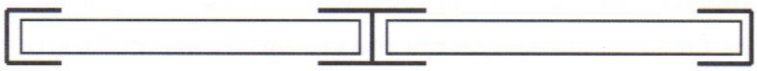


Fig1

*note drawing not to scale
Angle of wall is an illustration only

Top View of "C & H" Section



The above diagram shows a simple wall using Galvanised "H & C" section channels for posts. 90° corner and other angled sections are also widely available.

Square or round timber posts are also common methods of construction, Fig 2 shows the top view of sleeper posts for upright.

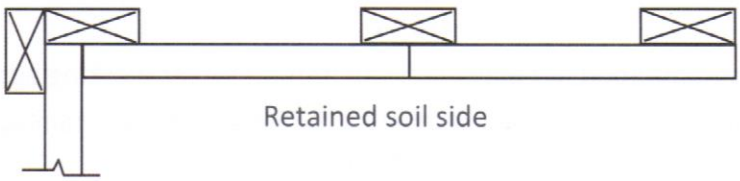


Fig 2

Note all fixings must be hot dipped galvanised. Speak to your hardware supplier about the appropriate fixing and recommended fixing method for the sleeper and post sizes being used.

Note: The information provided is for a non-structural retaining wall less than 1 metre. The recommendations are a guide only and no guarantees are provided using these methods. All treated pine must be resealed with an appropriate preservative when cut, dressed, drilled or notched.