

CCA Preservative Treated Sawn Timber Sleepers for Retaining Walls

Introduction

CCA treated sleepers are used for retaining walls in general landscaping applications around Australia. These sleepers are treated to Hazard Classes as defined in Australian Standards. Hazard Class H4 treatment level is used for general retaining applications, such as low retaining walls less than 1m in height. Where the sleepers are in contact with ground water, or used for walls greater than 1m in height, or other more critical applications, the sleepers should be treated to Hazard Class H5. It should be noted that walls greater than 1m in height or carrying superimposed loads such as structures, pools etc. may be required to be Engineer-designed and may require structural grading of the sleepers. In any case, contact your local council for regulations regarding the positioning, height, approvals and other issues associated with retaining walls.

Preservative Treatment Requirements

Large-sectioned sawn timbers such as sleepers are likely to include areas of both heartwood and sapwood. All sapwood should be treated.

Because heartwood is at times difficult to treat, the Australian Standard that deals with timber treatment limits the amount of unpenetrated heartwood to 20% of the cross section (along with further limits on the precise location of the heartwood), or requires at least 10 mm penetration (H5 requires 20mm) from all faces, including those that contain heartwood.

If 10mm (20mm for H5) penetration is required, the central section of the sleeper may contain large sections (more than 20%) of untreated corewood)



Example of excessive unpenetrated heartwood in CCA-treated pine sleeper, revealed after docking an end and using a colour indicator.

Getting the Best Service Life

Here are some steps that can be taken to improve service life of treated pine sleeper walls:

- Avoid cutting wherever possible. If cutting cannot be avoided, all cuts and drilled holes should be resealed with a reseal preservative*.
- Sleepers cut as posts should have the cut end placed above ground level where possible, and a reseal product applied to both ends.
- Sleepers should be well restrained in any application; poor restraint will create distortion. Use hot-dipped fixings and hardware, or stainless fixings in severe applications
- Make sure that posts have adequate embedment in the ground, and are set with concrete, where appropriate, to assist in ensuring the wall has minimal distortion.
- Any backfill in the post holes should not be in direct contact with the post surfaces, especially if the posts are set in cement or stabilised soil. Black polyethylene or bituminous paint should form a barrier between the post surfaces and the backfill.

Marking

CCA preservative treated timber which is treated in compliance with the Australian Standard should be marked with an appropriate tag, burn brand or other marking. The marking should indicate the treatment plant or producer, the treatment formulation number (for CCA this is '01') and the Hazard Class, i.e. H4 or H5. For CCA treatment the words "Treated with Copper Chrome Arsenate" must also be included.



Council Regulations

Always check local government requirements for the construction of retaining walls before you build.

Reseal Products for Sleeper Walls

Copper Napthenate oil and pastes are recommended for resealing the cut ends of sleepers and posts used in retaining walls. These products are available from hardware stores.

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