

Premature Decay of Hardwood Sleepers – Keeping the trains Running

General

It will be some time before all rotten sleepers can be replaced and the disruption caused to the running of trains **must** be kept to a minimum without compromising safety. Where TSR's are considered necessary, every effort must be made to either raise the speed restriction or remove it all together, even if this means using visually accepted sleepers from current stock.

TSR's

Any guidelines on when to impose TSR's given in this document are strictly for guidance only. The decision to impose a TSR can only be made locally based on the judgement and knowledge of the various Area Managers, Field Engineers and Track / Structures Inspectors. Should further advice be required, please do not hesitate to consult Track or Structures personnel in Wellington.

Small Numbers of Rotten Sleepers Grouped Together

Judgement must be used to estimate the ability of the sleepers to carry load. A sleeper that is considered to be completely rotten will lose its ability to carry load. Where a number of rotten sleepers not providing support are found grouped together, the guidelines on consecutive ineffective sleepers and fastenings given in Table 8 (page 164 of the T:200 handbook) must be followed.

Large Numbers of rotten Sleepers Grouped Together

Gauge spread must be checked and the ability of the sleepers to carry load must be assessed. The guidelines on consecutive ineffective sleepers and fastenings given in Table 8 (page 164 of the T:200 handbook) must be followed.

"Soft" Sleepers

These are sleepers that have not completely rotted and can be considered as providing limited support. They are sometimes called "dozey" sleepers. As well as checking gauge spread in large groups, they should be watched under load as they may appear to be providing support, but the plates may sink into the timber under load. Turnouts may be particularly vulnerable in this condition.

T:200 Network Engineering Track Handbook

In all cases the guidelines given in Table 8 (page 164 of the T:200 handbook) on consecutive ineffective sleepers and fastenings must be followed.

TSR Register

Where TSR's are applied as a result of finding rotten sleepers, please register them as "Rotten Sleepers". Please do not enter them as either "Track Fault" or "Bridge Fault". This will enable rapid analysis of the number of TSR's caused directly by the rotten sleeper issue.

Sleepers that are found to be rotten will be required to be replaced. Until such times as a new supply of sleepers is received, expected May / June, the following policy should be adopted.

Bridges

1. Where rotten sleepers are few and not grouped together: -
 - a. Monitor the situation on a regular basis (say 3 monthly).
 - b. Plate the lazies either side of the rotten sleeper(s) (if it is load carrying) if they can be plated.
2. Where a small number of rotten sleepers are grouped together and a TSR is not considered to be required:-
 - a. Plate the lazies either side of the rotten sleepers if they can be plated.
 - b. Monitor the situation on a regular basis (say 1 monthly).
3. Where a number of rotten sleepers are grouped together and a TSR is considered to be required: -
 - a. Plate the lazies either side of the rotten sleepers if they can be plated to enable the TSR to be raised or lifted.
 - b. Monitor the situation on a regular basis (say 1 monthly).
 - c. If it is not considered possible to plate the lazies, replace the rotten sleepers with “visually sound” sleepers from current stocks.
4. Where a large number of rotten sleepers are grouped together such that closure of the bridge is considered to be required: -
 - a. Replace **all** sleepers with “visually sound” sleepers from current stocks.
5. Where a bridge is in an awkward or difficult location, a regional / area judgement on the use of any of the above or a combination of any of the above should be used to get the best result to allow trains to run with the minimum of disruption.

Switches and Crossings

The operation of both hand thrown and motor points depends on the integrity of the long sleepers to which the mechanisms are bolted. Also look for sleeper integrity on the sleeper that has the back drive bolted to it.

Gauge spread must be checked on turnout curved roads.

Where critical sleepers are found to be heavily decayed such that they cannot provide sufficient support replace the rotten sleepers with “visually sound” sleepers from current stocks.

Inspection of hardwood sleepers in these critical positions are to be done on a monthly basis.

Level Crossings

These are difficult to assess due to the asphalt covering them. Runners on the top may give an indication of the sleeper condition beneath.

Look for loss of top and line through the level crossing that will indicate the condition of the sleepers underneath.

Gauge spread must also be checked.

Where critical sleepers are found to be heavily decayed such that they cannot provide sufficient support replace the rotten sleepers with “visually sound” sleepers from current stocks.

Inspection of hardwood runners and top and line through the level crossing are to be done on a monthly basis.

Plain Line

T200 Page 164 gives the percentage of ineffective sleepers against curve radius and speed of the TSR. This will not be altered for the current problem we have with the premature rot of hardwood sleepers.

Where critical sleepers are found to be heavily decayed such that they cannot provide sufficient support replace the rotten sleepers with “visually sound” sleepers from current stocks.

Health and Safety

Concerns have been raised that the moulds and fungi present on these sleepers may represent a health risk to those that come into contact with it.

We have been advised by SPS Biosecurity Ltd that the moulds and fungi are not a health risk but could cause an allergic reaction in people with lung problems or Asthma.

It is suggested that if individuals have any concerns or known health risks then they should wear a standard paper mask. If handled outdoors there would be no risk.

It should be noted that these moulds and fungi are the same as would be present in any walk through bush or woodland.