

# RAILWAY TIE MANAGEMENT



**Railway ties are managed safely and responsibly to keep Canada's rail network strong and reliable.**

Railway ties are an essential part of the track system. They are chosen, treated, inspected, replaced, and managed at end-of-life according to established safety standards and regulations.

## RAILWAY TIES ARE CRITICAL TO SAFETY

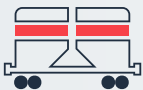
Railway ties are horizontal structural beams that are placed underneath the rails and maintain the safety and integrity of rail operations by:



Maintaining track gauge (the spacing between the rails) preventing them from spreading apart and moving out of alignment.



Helping to absorb the shock and vibration from trains which reduces the wear and tear on the rails and on other track components.



Transferring train loads to the wider area of the ballast and subgrade.



Supporting and securing the rails on which the trains travel.

**Material selection – wood, concrete, steel, or composite may be used depending on operating conditions, traffic levels, and engineering requirements.**

Wood ties remain widely used across the railway industry because they perform reliably under a broad range of traffic and weather conditions. They also support key track and signalling requirements.



## WOOD TREATMENT FOLLOWS STRICT GOVERNMENT SAFETY RULES

**Wooden ties are treated to protect them from moisture, wear, and natural decay. This helps them last longer and maintain track stability.**



### In Canada:

- Wood preservatives must be approved by Health Canada's Pesticides Regulatory Directorate (PRD).
- These products are re-evaluated regularly.
- Treatment happens only at approved facilities.

Creosote is the most commonly used preservative in North American railways. The rail ties industry continues to study and test other options, but any alternative must meet the same safety and performance standards.

## TIES ARE INSPECTED AND REPLACED REGULARLY

Railway track, including the railway ties, is inspected on a regular basis to maintain safety.

When a tie no longer meets safety standards, it is replaced as part of routine maintenance.

As part of these maintenance programs, new wooden railway ties are moved by rail cars to the location in which they are to be installed. They are then placed in bundles as close to the target location as possible at which time railway personnel or contractors use specialized equipment to remove the old railway ties and install new ones. Temporary storage on railway property of removed ties pending removal for disposal is a common practice.

### RAILWAY TIES TYPICALLY REMAIN IN SERVICE FOR



# 20-50 years

before they need to be replaced. Canada's railways replace hundreds of thousands of railway ties each year to maintain safe operations.

### WHAT IS DONE WITH THE WOODEN RAILWAY TIES ONCE THEY ARE REMOVED?

End-of-life options are determined by:



- Safety requirements
- Environmental regulations
- Regulatory compliance
- Local approved disposal options

At the end of their service life, ties may be reused, recycled, managed through energy recovery at a limited number of approved facilities, or disposed of at approved landfills or incineration facilities.

## ENVIRONMENTAL OVERSIGHT AT EVERY STAGE

Environmental considerations are incorporated into the regulation, study, and management of railway ties throughout their lifecycle.

The preservatives used in railway ties have been the subject of scientific study over several decades, including research on their behaviour under different environmental conditions.

Published research has examined how preservative components interact with wood and surrounding materials over time, including observations that these substances are retained within the wood matrix and that measured concentrations in surrounding areas decrease with distance from the tie under typical conditions.

Railway operations are conducted within established environmental rules and oversight frameworks.

## SAFETY, RELIABILITY, AND ACCOUNTABILITY



**Railway ties are part of a broader safety system that supports:**

- Safe operations
- Reliable supply chains
- National connectivity

Canada's railways manage railway ties through structured maintenance and replacement programs to support safe and effective performance throughout their lifecycle, from installation through end-of-life.

