Composite railway sleeper: a cost effective and eco-friendly alternative

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Motivation
• **High maintenance cost**
• **Huge CO\textsubscript{2} emission**
• **Early failure in the existing sleeper**

Environmental Problems

Our Solution: Composite materials + Optimisation
Composite = Eco friendly + No insect infection and chemical attack

Stress distribution

Material wastage

Material savings

Conclusions:
• Optimised shape reduces two-third volume of materials
• Composite sleeper behaviour is comparable with timber