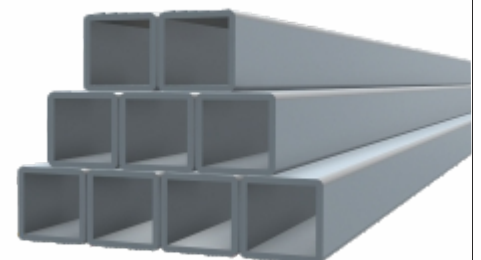


Roof Support- Composite Sleepers for Underground Mines



**Replacing traditional wooden sleepers with
Glass Fibre Reinforced Polymer (GFRP)**

**NEW MATERIALS
BUSINESS**
An Initiative of Tata Steel





Challenge with Wooden Sleepers

- Wooden sleepers are used in underground mines for supporting roofs, which are typically replaced every 2-3 months due to chronic deterioration caused by high moisture content.
- The wooden cogs are carried and installed by employees under tough and hazardous conditions.



GFRP Sleepers Offering from Tata Steel, NMB

Tata Steel offers GFRP Sleepers to replace the existing wooden sleepers which offers multiple benefits as listed below

Benefits



More than 5 years of service life



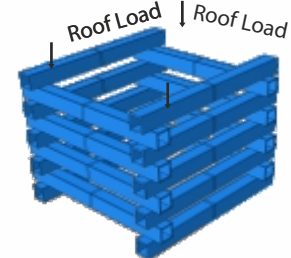
Reduced labour and maintenance cost (3X cost savings over a period of 5 years)



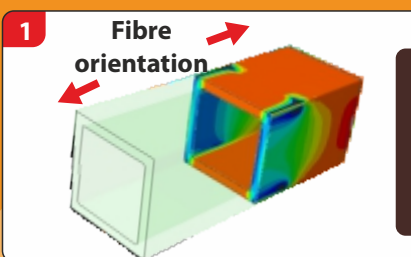
Positive environmental impact and lower carbon footprint due to lower felling of trees



High durability and light-weight



GFRP Sleepers Approach and Design

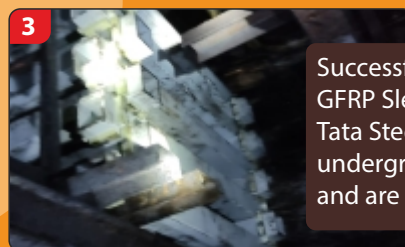


Finalisation of design is based on FE simulations of composite materials

Design driven by computer simulations, validated by lab testing, prototyping and field trial



Prototyping Testing



Successfully installed GFRP Sleepers in Tata Steel underground mines, and are in operation

All required quality tests performed on final components as per standard tests

Compliance to standards: ASTM D638/639/695/790, ASTM D2584, ASTM D570, ASTM D 2583, UL94 V0 and toxicity level less than 1%

For more details, please contact

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Disclaimer: This details are only for information purpose, and should not be used without Tata Steel consent.

