Steel sleepers
Lower lifetime cost and more efficient logistics

Technical Data Sheet

Steel sleepers from British Steel are designed for use in a wide range of applications, from metre gauge railways to mainline passenger and heavy haul freight routes.

British Steel has a long and proud history of supplying steel sleepers worldwide, with strict quality assurance processes in place to ensure every delivery will have a long life in service.

Our steel sleepers are manufactured from hot rolled steel produced at our Scunthorpe steelworks, and comply with all major standards (UIC, AREMA, AS etc).

Working in partnership to meet customer needs
British Steel works in partnership with customers to understand the needs of the rail sector and develop innovative and value-adding products to directly address those needs.

In-house product development work, including extensive cyclic load and lateral resistance testing of finished sleepers, has resulted in a range of steel profiles that ensures efficient sleeper designs and a track which holds its alignment even under the most intensive traffic conditions. Our steel sleepers can be adapted to suit all types of rail profiles and fastening systems required by our customers.

Our steel sleepers require less ballast than traditional concrete sleepers, leading to reduced track construction and renewal costs. Also benefiting from a smaller carbon footprint, our steel sleepers are recyclable, making it easier to hit your sustainability targets.

Less ballast required
Steel sleepers need less depth of ballast than concrete sleepers, because the body of ballast within the sleeper provides the necessary support to distribute the load.

Our steel sleepers can be laid onto existing ballast. The sleeper profile and spade ends interact with the ballast bed to produce a highly stable track support requiring only minimal quantities of fresh imported ballasted to complete the installation. Installation of concrete sleepers requires more excavation and preparation – up to 450mm of the old ballast and formation has to be removed to achieve the ballast depths required for concrete sleepers.

The reduced ballast depth means that steel sleepers can also be used where you need to achieve lower height construction. This has solved problems for overhead clearances in tunnels and over bridges, or where reduced dead loads are needed for underbridges.

Durable solution for track installations
Once installed, steel sleepers don’t rot and are resistant to insect attack. Steel sleepers also survive well in wet tropical climates where wood decays rapidly.

Ease of transportation
Steel sleepers are stackable and light enough to be manually handled on site or moved in bundles by a forklift. Road vehicles can carry 3 times more steel sleepers than concrete sleepers, meaning lower logistics costs.
Rigorous testing for product performance
The effectiveness of our steel sleepers is assured by our comprehensive laboratory testing procedures which cover stringent criteria such as fatigue resistance, lateral stability and electrical resistance. Pads and insulators for our steel sleepers are tested in accordance with EN 13145-5:2002, ensuring very high electrical resistance and compliance with track circuit signalling requirements.

In-track performance
Our sleepers have been used extensively across the UK for the last 25 years. During this time, the use of steel sleepers on lower category routes and single track lines has become the default solution for track renewal due to the significant cost savings achieved compared to using concrete sleepers. The use of steel sleepers has allowed typical production rates of 300m during a midweek night “no trains period” possession.

Technical support
Our technical team is available to provide advice and support, helping you to optimise your steel sleeper selections. Steel sleepers can be matched precisely to rail sizes, gauges, inclinations, axle loads and a host of other variables to ensure that every sleeper we deliver provides optimum performance throughout its service life.

Steel sleeper property table
The table below indicates the standard mechanical properties for British Steel's steel sleeper range.

<table>
<thead>
<tr>
<th>Principle dimensions</th>
<th>202</th>
<th>300</th>
<th>402</th>
<th>436</th>
<th>600</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rail seat thickness</td>
<td>mm</td>
<td>7.5/12.0</td>
<td>12.0</td>
<td>10.0</td>
<td>12.0</td>
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<tr>
<td>Leg thickness</td>
<td>mm</td>
<td>6.75</td>
<td>7.0</td>
<td>7.0</td>
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<tr>
<td>Section width B</td>
<td>mm</td>
<td>240</td>
<td>254</td>
<td>260</td>
<td>260</td>
</tr>
<tr>
<td>Height of neutral axis from base</td>
<td>mm</td>
<td>58.1</td>
<td>67.0</td>
<td>67.1</td>
<td>68.4</td>
</tr>
<tr>
<td>Plate weight</td>
<td>kg/m</td>
<td>22.10</td>
<td>28.36</td>
<td>28.54</td>
<td>31.69</td>
</tr>
</tbody>
</table>

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Using steel sleepers is only 60% of the cost of using concrete

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