

Specification for

Heavy rolling stock for mineral haulage in mines

Confirmed
January 2011

Co-operating organizations

The Colliery Requisites Industry Standards Committee, under whose supervision this British Standard was prepared, consists of representatives from the following Government department and scientific and industrial organizations:

- Association of Mining Electrical and Mechanical Engineers
- British Electrical and Allied Manufacturers' Association
- British Iron and Steel Federation*
- Federation of Associations of Colliery Equipment Manufacturers
- Institution of Electrical Engineers
- Institution of Mechanical Engineers
- Institution of Mining Engineers
- Mechanical Handling Engineers' Association
- Ministry of Power*
- National Association of Colliery Managers
- National Coal Board*

The Government department and industrial organizations marked with an asterisk in the above list, together with the following, were directly represented on the committee entrusted with the preparation of this British Standard:

- British Steel Founders' Association
- National Association of Drop Forgers and Stampers
- Pit Tub and Mine Car Manufacturers' Association

This British Standard, having been approved by the Colliery Requisites Industry Standards Committee and endorsed by the Chairman of the Engineering Divisional Council, was published under the authority of the General Council on 22 November 1966

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The following BSI references relate to the work on this standard:
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Foreword

This standard makes reference to the following British Standards:

BS 4, *Structural steel sections — Part 1: Hot-rolled sections.*

BS 15, *Mild steel for general structural purposes.*

BS 18, *Methods for tensile of metals.*

BS 24, *Railway rolling stock material — Part 3A: Laminated springs and spring steel — Part 3B: Helical and volute springs and spring steels — Part 6: Steel slabs, plates, sections, bars and rivets for locomotive boilers, locomotives, carriages and wagons.*

BS 275, *Dimensions of rivets ($1\frac{1}{2}$ in to $1\frac{3}{4}$ in diameter).*

BS 639, *Covered electrodes for the manual metal-arc welding of mild steel and medium-tensile steel.*

BS 693, *General requirements for oxy-acetylene welding of mild steel.*

BS 729, *Zinc coatings on iron and steel articles.*

BS 970, *Wrought steels (Blooms, billets, bars and forgings).*

BS 1449, *Steel plate, sheet and strip.*

BS 1452, *Grey iron castings.*

BS 1473, *Wrought aluminium and aluminium alloys for general engineering purposes. Rivet, bolt and screw stock for forging.*

BS 1476, *Wrought aluminium and aluminium alloys for general engineering purposes. Bars and sections.*

BS 1477, *Wrought aluminium and aluminium alloys for general engineering purposes. Plate.*

BS 1663, *Higher tensile steel chain Grade 40 (short link and pitched or calibrated) for lifting purposes.*

BS 1806, *Dimensions of toroidal sealing rings ("O" seals and their housings).*

BS 1856, *General requirements for the metal-arc welding of mild steel.*

BS 2772, *Iron and steel for colliery haulage and winding equipment — Part 2: Wrought steel — Part 3: 1.5 percent manganese steel castings for mine car couplers.*

BS 2901, *Filler rods and wires for inert-gas arc welding — Part 1: Gas-shielded tungsten-arc welding — Part 2: Wires for gas-shielded metal-arc welding.*

BS 2994, *Cold rolled steel sections.*

BS 3019, *General recommendations for manual inert-gas tungsten-arc welding — Part 1: Wrought aluminium, aluminium alloys and magnesium alloys.*

BS 3032, *Higher tensile steel shackles.*

BS 3100, *Steel castings for general engineering purposes: which includes.*

BS 592, *Carbon steel castings for general engineering purposes.*

BS 1456, *$1\frac{1}{2}$ per cent manganese steel castings.*

BS 1457, *Austenitic manganese steel castings.*

BS 3134, *Dimensions of tapered roller bearings.*

BS 3571, *General recommendations for manual inert-gas metal arc-welding — Part 1: Aluminium and aluminium alloys.*

BS 3673, *Spring retaining rings — Part 1: Carbon steel circlips.*

This British Standard has been prepared under the authority of the Colliery Requisites Industry Standards Committee, with the purpose of stating principles of design and specifying certain major components of mineral haulage rolling stock (60–200 ft³ capacity), generally known as “mine cars”, in coal mines in the United Kingdom. The specification is complementary to BS 3237 (which deals with light and medium rolling stock of capacity below 60 ft³, for mineral haulage in mines) and it is designed to cover a range of heavy rolling stock incorporating suspension gear, couplers and buffing gear, and wheel and axle assemblies (embodying taper roller bearings); also ancillary equipment such as tippler and retarder brackets, and brakes. Drop bottom and side tipping types, and special purpose vehicles such as containers operating on restricted circuits, are excluded. However, it is recommended that components from this standard be utilized for such vehicles, where applicable.

Comprehensive dimensions for a range of 21 cars are given in Table 1 and the preferred sizes representing general colliery usage in the U.K. are indicated.

In preparing standard requirements for the complete vehicle, care has been taken to avoid detail that would unnecessarily restrict design. Hence, the specification for components deals mainly with design principles and basic requirements essential to a product of good quality.

No provision is made for nipples for the pressure greasing of wheels (Figure 4 and Figure 5); it is modern practice to grease the bearings during original assembly and only to renew the grease at planned maintenance periods.

Attention is drawn to the serious hazard inherent in the use of aluminium or aluminium alloy in incandive atmospheres, particularly in mines in which the use of lamps or lights, other than permitted lights, is unlawful.

NOTE Where metric equivalents have been given (see Appendix D), the figures in British units are to be regarded as the standard. The metric conversions are approximate. More accurate conversions should be based on the tables in BS 350, Part 1, “*Conversion factors and tables*”.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

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Summary of pages

This document comprises a front cover, an inside front cover, pages i to iv, pages 1 to 40, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.