

Rope rollers, pulleys, mountings and assemblies for colliery track haulage —

Part 1: Specification for parallel barrel rollers, mountings and assemblies

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Committees responsible for this British Standard

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- Association of British Mining Equipment Companies
- British Foundry Association
- British Steel Industry
- Federation of Wire Rope Manufacturers of Great Britain
- Health and Safety Executive
- Institution of Mining Electrical and Mining Mechanical Engineers

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Foreword

This Part of BS 3876 has been prepared under the direction of the Mining and Quarrying Requisites Standards Policy Committee (MQE/-) and is a full technical revision of both BS 3876-1:1965 and BS 3876-4:1966 both of which are withdrawn.

The other Parts in the revised edition of BS 3876 are as follows:

- *Part 2: Specification for vertical spindle pulleys, mountings and assemblies;*
- *Part 5: Specification for suspended pulley assemblies and clamps.*

In the revised Parts, the following points should be noted:

- a) tapered rollers, covered in BS 3876-2:1965, are now omitted from the revised Part 2;
- b) vertical rollers, which were included in the 1965 edition of Part 2, are now omitted as it is considered the parallel barrel rollers specified in Part 1 can be used in the vertical mode;
- c) horizontal spindle pulleys, covered in the 1965 edition of Part 2, are relocated in Part 5 of the revised edition;
- d) Part 3:1965 has been withdrawn because there is no longer any requirement for rollers with non-metallic rope bearing surfaces;
- e) the requirements for mountings for parallel barrel rollers, previously specified in BS 3876-4:1966, have been revised and incorporated into this expanded edition of Part 1; there is therefore no need for retention or revision of a separate Part 4.

During the revision, all dimensions have been metricated and these are not necessarily straight conversions from the imperial dimensions previously adopted. In particular, barrel diameters have been adjusted to align with the outside diameters of metric tubes now available.

Product certification. Users of this British Standard are advised to consider the desirability of third party certification of product conformity with this British Standard based on testing and continuing surveillance, which may be coupled with assessment of a supplier's quality systems against the appropriate Part of BS 5750. Enquiries as to the availability of third party certification schemes will be forwarded by BSI to the Association of Certification Bodies. If a third party certification scheme does not exist, users should consider approaching an appropriate body from the list of Association members.

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 and ii, pages 1 to 12, 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.

1 Scope

This Part of BS 3876 specifies requirements for fabricated and cast steel rope rollers, mountings and roller assemblies intended for use in colliery track haulage.

This Part applies to

- a) rollers, with or without incorporated wind-back facilities and supplied without mountings, for which the diameters of the roller barrels do not exceed the lengths of the rollers to the outsides of their flanges;
- b) mounting, either high or low type and dependant upon roller diameters; and
- c) roller assemblies that comprise both the rollers and the mountings.

NOTE 1 Appendix A gives the information which should be supplied by the purchaser, in his enquiry and/or order for rollers, mountings or assemblies in accordance with this Part of BS 3876.

NOTE 2 Appendix B gives the information that will be required by the purchaser, to be provided by the supplier, prior to the supply of rollers, mountings or assemblies in accordance with this Part of BS 3876.

NOTE 3 Appendix C gives general recommendations for the design and operating speeds for colliery track haulage rollers.

NOTE 4 No inspection requirements are specified in this Part of BS 3876. However, a typical requirement that the purchaser may choose to write into his order or contract for rollers, mountings or assemblies to this Part is given in Appendix D.

NOTE 5 The titles of the publications referred to in this Part of BS 3876 are listed on the inside back cover.

2 Definitions

For the purposes of this Part of BS 3876, the following definitions apply.

2.1

barrel

that part of the roller cylinder on which the rope runs

2.2

roller

a cylinder that is free to rotate to support or guide a moving rope, having a parallel barrel, parallel or taper sided flanges, windback facilities when required, complete with spindle and bearings

2.3

roller end/end cap

a casting or fabrication at each end of the cylinder that contains the flange, bearing housing and windback facility when required

NOTE In the case of cast roller cylinders, the ends are parts of the casting.

In the case of fabricated roller cylinders, the end caps are fixed by welding or by tie-rods.

2.4

windback facility

a scrolled configuration forming part of the roller end/end cap the effect of which is to impart a lateral movement, towards the roller barrel, to any moving haulage rope in contact with the scroll in either direction of roller rotation

2.5

throw (eccentricity)

the total variation from true running of the periphery of the barrel when rotated on the spindle¹⁾

2.6

mounting

the frame to which the roller is, or is to be, attached

2.7

roller assembly

the roller and its mounting

3 General

The roller components and mountings shall comply with the requirements specified in clauses 4 to 7, as appropriate.

4 Dimensions and shape of roller components and mountings

4.1 Dimensions

The dimensions of the roller components and mountings shall be as given in Table 1 to Table 4.

NOTE For convenience, typical rollers and mountings are illustrated in Figure 1 to Figure 4 which identify the dimensions referred to in Table 1 to Table 4.

4.2 Eccentricity of the barrels

The eccentricity of the barrel when determined at the fixed points BB shown in Figure 5 (i.e. the radial run out as defined in BS 308-3), shall not exceed the following:

- a) 1.5 mm, for barrels up to and including 168 mm diameter; and
- b) 2.3 mm, for barrels exceeding 168 mm diameter.

¹⁾ See Figure 5.

