## **Specification for**

# Large (vee-throated) haulage rope pulleys for mines and quarries

Confirmed January 2011

UDC 622.625.5:625.52-235.15



NO COPYING WITHOUT BSI PERMISSION EXCEPT AS PERMITTED BY COPYRIGHT LAW

### Co-operating organizations

The Mining and Quarrying 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 Steel Industry

Council of Underground Machinery Manufacturers

Department of Trade and Industry\*

Engineering Equipment Users' Association

Federation of Manufacturers of Construction Equipment and Cranes

Institute of Quarrying

Institution of Mechanical Engineers

Institution of Mining Engineers

National Coal Board\*

The Government department and industrial organization 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:

Council of Ironfoundry Associations

Federation of Wire Rope Manufacturers of Great Britain

This British Standard having been approved by the Mining and Quarrying Requisites Industry Standards Committee, was published under the authority of the Executive Board on 5 October 1973

© BSI 12-1999

The following BSI references relate to the work on this standard:
Committee reference MQE/18
Draft for comment 70/19950

ISBN 0 580 07377 7

#### Amendments issued since publication

| Amd. No. | Date of issue | Comments |
|----------|---------------|----------|
|          |               |          |
|          |               |          |
|          |               |          |
|          |               |          |

This is a preview. Click here to purchase the full publication.

# Contents

|      |                                       | Page               |
|------|---------------------------------------|--------------------|
| Co-o | perating organizations                | Inside front cover |
| Fore | word                                  | iii                |
| 1    | General                               |                    |
| 1.1  | Scope                                 | 1                  |
| 1.2  | Definitions                           | 1                  |
| 2    | Pulleys                               |                    |
| 2.1  | General                               | 1                  |
| 2.2  | Materials                             | 2                  |
| 2.3  | Rim section                           | 2                  |
| 2.4  | Hubs                                  | 2                  |
| 2.5  | Machining                             | 2                  |
| 2.6  | Keyways                               | 2                  |
| 2.7  | Spokes                                | 3                  |
| 3    | Shafts                                |                    |
| 3.1  | Material                              | 3                  |
| 3.2  | Machining                             | 3                  |
| 3.3  | Dimensions and tolerances             | 3                  |
| 3.4  | Bearing pedestal centres              | 4                  |
| 4    | Bearing pedestals                     |                    |
| 4.1  | General                               | 4                  |
| 4.2  | Material                              | 4                  |
| 4.3  | Machining                             | 4                  |
| 4.4  | Dimensions and tolerances             | 4                  |
| 5    | Bearing bushes                        |                    |
| 5.1  | Material                              | 5                  |
| 5.2  | Machining                             | 5                  |
| 5.3  | Dimensions and tolerances             | 5                  |
| 6    | Rolling bearings                      |                    |
| 6.1  | Bearings                              | 5                  |
| 6.2  | Seals                                 | 5                  |
| 6.3  | Bearing lubrication                   | 5                  |
| 7    | Keys                                  |                    |
| 7.1  | Details                               | 5                  |
| 8    | Bolts for split pulleys               |                    |
| 8.1  | Bolts                                 | 5                  |
| 8.2  | Nuts                                  | 6                  |
| 8.3  | Washers                               | 6                  |
| 9    | Workmanship                           |                    |
| 9.1  | Details                               | 6                  |
| 10   | Inspection                            |                    |
|      | Purchaser's rights                    | 6                  |
| 11   | Protective coating                    |                    |
|      | Details                               | 6                  |
| 12   | Marking                               |                    |
|      | Details                               | 6                  |
| 13   | Information to be provided with order |                    |
|      | Details                               | 6                  |

|   |                                    | Page     |  |
|---|------------------------------------|----------|--|
| Appendix A Notes on the determination                                 | n of minimum pulley diameters      | 8        |  |
| Figure 1 — Rim section (one-piece solic                               | type pulley) for topes of 19 mm    |          |  |
| diameter and under  |                                    | 10       |  |
| Figure 2 — Rim section (spoked type p                                 | ulley) for ropes of 22 mm          |          |  |
| and under   |                                    | 11       |  |
| Figure 3 — Rim section for ropes of 14                                | mm to 38 mm diameter (inc.)        | 12       |  |
| Figure 4 — Pulleys 600 mm (2 ft) and 750 mm (2 ft 6 in) diameter      |                                    |          |  |
| Figure 5 — Pulley 900 mm (3 ft) diame                                 | eter (internal rolling bearings)   | 14       |  |
| Figure 6 — Solid hub and shaft arrang                                 | rement (internal rolling bearings) | 15       |  |
| Figure 7 — Split hub and shaft arrang                                 | ement (internal rolling bearings)  | 16       |  |
| Figure 8 — Pulleys 600 mm (2 ft) diam                                 | eter and 750 mm (2 ft 6 in)        | 17       |  |
| diameter (external plain bearings)                                    |                                    |          |  |
| Figure 9 — Pulley 900 mm (3 ft) diameter (external plain bearings)    |                                    |          |  |
| Figure 10 — Solid hub and shaft arrangement (external plain bearings) |                                    |          |  |
| Figure 11 — Split hub and shaft arrangement (external plain bearings) |                                    |          |  |
| Figure 12 — Pedestal  |                                    | 21       |  |
| Figure 13 — Bearing housing   |                                    | 22       |  |
| Figure 14 — Bush and thrust washer                                    |                                    | 23       |  |
| Figure 15 — Pulley/rope diameters (6                                  | 7 (6/1) round and 6 8 (7/%)        |          |  |
| triangular strand)  |                                    | 24       |  |
| Figure $16$ — Pulley/rope diameters (6                                | 19 (9/9/1) round strand)           | 25       |  |
| Figure $17$ — Pulley/rope diameters (6                                | 22 (9/12/%) triangular strand)     | 26       |  |
| Figure $18$ — Pulley/rope diameters (6                                | 25 (12/12/%) triangular strand)    | 27       |  |
| Table 1 — Pulley classification                                       |                                    | 1        |  |
| Table 2 — Details of spokes   |                                    | 3        |  |
| Publications referred to  | Inside bac                         | ek cover |  |