BRITISH STANDARD

BS 6708 : 1998

Flexible cables for use at mines and quarries

Confirmed
January 2011

ICS 29.060.20

Committees responsible for this British Standard

The preparation of this British Standard was entrusted by Technical Committee MRE/3, Mining Electrical Equipment, to Subcommittee MRE/3/1, Cables and their connections, upon which the following bodies were represented:

Association of British Mining Equipment Companies
British Cable Makers' Confederation
Health and Safety Executive
Quarry Products Association

This British Standard, having been prepared under the direction of the Engineering Sector Board, was published under the authority of the Standards Board and comes into effect on
15 April 1998

Amendments issued since publication

Amd. No.	Date	Text affected

The following BSI references relate to the work on this standard:
Committee reference MRE/3/1
Announced in *BSI Update*
96-08-01

ISBN 0 580 28651 7

Contents

Page

Figures

Foreword

This British Standard has been prepared by Technical Committee MRE/3/1. It supersedes BS 6708 : 1991 which is withdrawn. It updates insulation specifications and short circuit current ratings, and now includes a section covering cable types 307, 307M and 307S for rated voltages of 1900/3300 V and having individual metallic screens.

All matters relating to the use of electric cables in mines and quarries are now included in the Electricity at Work Regulations 1989 [1] and the associated Health and Safety Executive (HSE) Approved Codes of Practice, i.e. *The use of electricity in mines* (COP 34) [2] and *The use of electricity at quarries* (COP 35) [3]. Guidance is given in annex A.

Attention is drawn to the Health and Safety at Work etc. Act 1974 [4], the Mines and Quarries Act 1954 [5], the regulations made under these, and also any other appropriate statutory requirements or by-laws. These place responsibility for complying with certain specific safety requirements on the manufacturer and the user.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, pages i to iv, pages 1 to 58, an inside back cover and a back cover.

1 Scope

This British Standard specifies requirements and dimensions for flexible cables used in mining and quarrying.

Specific types of cable covered in this standard are as follows:

a) non-armoured cables having individually metallic screened cores and a rated voltage of 640/1100 V, for use:

1) with coalface cutters and other similar machines: types 7, 7M, 7S, 11, 14 and 16;

2) in overhead catenary systems and similar applications: types FS4 (flat form cable);

b) cables with galvanized steel pliable wire armouring, with:

1) unscreened cores and a rated voltage 640/1100 V: types 20 and 21; or

2) individually metallic screened or unscreened cores and a rated voltage 640/1100 V used primarily for remote control circuits and coalface lighting: types 62, 63, 64, 70 and 71; or

3) individually metallic screened cores and a rated voltage 640/1100 V: types 201 and 211; or

4) a rated voltage 1900/3300 V used as trailing cables in quarries or for mine roadway cable extension purpose: types 321 and 331;

c) auxiliary cables with galvanized steel pliable wire armouring having up to 24 individually metallic screened cores and a rated voltage 320/550 V, primarily for use on large mining machines where interconnection between machine sections or a machine section and auxiliary equipment is required: types 506, 512, 518 and 524;

d) cables with galvanized steel pliable wire armouring having individually metallic screened or unscreened cores and a rated voltage 3800/6600 V, used as trailing cables in quarries and rated for roadway extension purposes: types 621, 630 and 631;

e) non-armoured cable having individually metallic screened cores and a rated voltage 600/1000 V, primarily for use with hand-held drilling machines in mines: type 44;

f) non-armoured cable having individually non-metallic screened cores and a rated voltage 600/1000 V, primarily for use with hand-held drilling machines in mines: type 43;

g) non-armoured cable having individually metallic screened cores and a rated voltage 3800/6600 V, primarily for use as trailing cables for large machines at quarries: type 730;

h) non-armoured cable having individually metallic screened cores and a rated voltage 6350/11000 V, primarily for use as trailing cables for large machines at quarries: type 830;

i) non-armoured cables having individually metallic screened cores and rated voltage 1900/3300 V, for use with coalface cutters and other similar machines: types 307, 307M and 307S.

NOTE 1. Information on approved codes of practice and conductivities related to the cables in this standard is given in annex A.

NOTE 2. Recommended current ratings are given in annex B.

NOTE 3. Short circuit current carrying capability of flexible cable screens is given in annex C.

2 Normative references

This British Standard incorporates, by dated or undated reference, provisions from other publications. These normative references are made at the appropriate places in the text and the cited publications are listed on the inside back cover. For dated references, only the edition cited applies; any subsequent amendments to or revisions of a cited publication apply to this British Standard only when incorporated in the text by amendment or revision. For undated references, the latest edition of the cited publication applies, together with any amendments.

3 Definitions

For the purposes of this British Standard, the definitions given in BS 4727 apply, together with the following.

NOTE. Unless otherwise specified, voltages and currents are expressed by their r.m.s. values.

3.1 rated voltage U_0

The power–frequency voltage to earth for which the cable is designed.

NOTE. It is assumed that cables may be operated continuously at a power–frequency voltage 10 % above the rated voltage.

3.2 rated voltage U

The power–frequency voltage between conductors for which the cable is designed.

NOTE. It is assumed that cables may be operated continuously at a power–frequency voltage 10 % above the rated voltage.

3.3 flexible cable

Cable designed to be moved while energized.

3.4 trailing cable

Cable used to supply apparatus that changes position while energized.

3.5 fixed cable

Cable that does not change position while energized.

3.6 stranded conductor

Conductor made up of a number of wires twisted together.

NOTE. When the conductor consists of more than one layer, alternate layers are twisted in opposite directions.