

Specification for

Interconnection of electrical apparatus, constructed to two or more British Standards, for use in mines susceptible to firedamp

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Committees responsible for this British Standard

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- Association of British Mining Equipment Companies
- Council for Electrical Equipment for Flammable Atmospheres (BEAMA)
- Health and Safety Executive
- National Coal Board

This British Standard, having been prepared under the direction of the Mining and Quarrying Requisites Standards Committee, was published under the authority of the Executive Board on 31 July 1986

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Foreword

This British Standard has been prepared under the direction of the Mining and Quarrying Requisites Standards Committee.

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.

Compliance with a British Standard does not of itself confer immunity from legal obligations. Attention is drawn to the Health and Safety at Work etc. Act 1974, the Mines and Quarries Act 1954, the Regulations made under these Acts, and also any other appropriate statutory requirements or byelaws. These place responsibility for complying with certain specific safety requirements on the manufacturer and the user. The address of the recognized certification authority in the United Kingdom for Group I mining apparatus is as follows:

Health and Safety Executive
HSE(M) Certification Support Unit
Harpur Hill, Buxton, Derbyshire SK17 9JN.

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 10, 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.

Section 1. General

1.0 Introduction

For several decades electrical apparatus¹⁾, including systems and components, for use in mines susceptible to firedamp (Group I²⁾ apparatus) has been designed and constructed in accordance with BS 229, BS 1259 and/or BS 4683 as appropriate. So far as the gas ignition risk is concerned, such apparatus satisfies the legal requirements applying to the use of electricity where potentially explosive atmospheres can occur below ground. Virtually all the electrical apparatus currently in use in mines is of this type and most has considerable further expectation of life.

Following the publication of BS 5501-1 to BS 5501-7 in 1977, implementing European Standards EN 50014 to EN 50020, and of BS 5501-9 in 1982, implementing European Standard EN 50039, in accordance with the responsibilities of the United Kingdom as a member of CENELEC, the mining interests in the United Kingdom have recognized the need for, and the benefit of, requiring that new Group I apparatus complies with BS 5501.

The certification and use of individual self-contained items of Group I apparatus, e.g. hand-held apparatus, complying solely with BS 5501 present no problems. However, any claim or certificate of compliance with BS 5501 would be invalidated by any deviations from the requirements of BS 5501 that may be necessary to provide for the functional electrical and/or mechanical connecting of such apparatus with apparatus complying with (or that would otherwise be required to comply with) the previously established standards (i.e. BS 229, etc.).

In these circumstances, this standard has been prepared to meet two objectives:

- a) to specify technical requirements for Group I apparatus in accordance with which a manufacturer may submit new items that are generally in accordance with BS 5501 for use as functionally connected units or systems with existing apparatus generally in accordance with BS 229, etc., for the certification and approval necessary to permit the use of the functionally connected units or systems in the potentially explosive atmospheres that occur in mines susceptible to firedamp;

- b) to promote the increasing use of BS 5501 for Group I apparatus in parallel with the progressive phasing out of Group I apparatus in accordance with the earlier standards and thereby to minimize barriers to trade in keeping with the commitments of the United Kingdom within the European Community.

It is anticipated that this standard will only be necessary for a transitional period, after which it will be withdrawn.

1.1 Scope

This British Standard specifies requirements for the construction and testing of interconnected electrical apparatus, including systems and components¹⁾, for use in mines susceptible to firedamp.

NOTE 1 The means of interconnection covered by this standard may be electrical, mechanical or involve the housing of one constituent within another.

This standard applies in circumstances where new apparatus, that has been designed and constructed generally in accordance with BS 5501, cannot fully comply with BS 5501 because of the provision made for connection by electrical and/or mechanical means to existing apparatus previously certified as complying with BS 229³⁾, BS 1259 or BS 4683 to comprise a single unit or system.

NOTE 2 For the purpose of this standard, apparatus that would otherwise be required to comply specifically with BS 5501, BS 229, etc., is described as, for example, "BS 5501 type", "BS 4683-2 type", etc. However, it is important to appreciate that the use of such descriptions is not intended to imply that the apparatus actually complies in all respects with the standard referred to although it may have been designed, constructed and certified in accordance with the standard referred to prior to being functionally connected.

References to apparatus previously certified to BS 1259 and any requirements specified in this standard for such apparatus are not intended to apply to circuits designed in accordance with BS 3101, or to earth fault monitoring circuits associated with motor control gear, unless otherwise stated.

NOTE 3 The titles of the publications referred to in this standard are listed on the inside back cover.

¹⁾ For the convenience of this standard the term "apparatus" is used throughout to include systems and components except where otherwise stated.

²⁾ In BS 1259 the expression "Class 1" is used, but for the purposes of this standard "Class 1" and "Group I" are regarded as synonymous. In BS 229, Group I refers to the gas group but for the purposes of this standard apparatus for gas Group I is regarded as Group I apparatus.

³⁾ For the purposes of this standard existing apparatus certified to the current or any earlier edition of BS 229 may be interconnected with BS 5501 type (see note 2 to 1.1) apparatus.