

Specification for

Film badges for personnel radiation monitoring

Co-operating organizations

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

- Association of Consulting Engineers (Incorporated)
- British Insurance (Atomic Energy) Committee
- Electricity Council, the Generating Board and the Area Boards in England and Wales*
- Institution of Chemical Engineers
- Institution of Electrical Engineers
- Institution of Mechanical Engineers
- Lloyd's Register of Shipping
- Ministry of Labour (H.M. Factory Inspectorate)*
- Ministry of Power*
- Nuclear Energy Trade Associations' Conference*
- Scientific Instrument Manufacturers' Association*
- United Kingdom Atomic Energy Authority*

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

- Admiralty
- British Institute of Radiology
- British National Committee for Non-Destructive Testing
- British Photographic Manufacturers' Association
- British Plastics Federation
- British Scientific Instrument Research Association
- Electronic Engineering Association
- Electronic Valve and Semi-conductor Manufacturers' Association
- Hospital Physicists' Association
- Institute of Physics and The Physical Society
- Middlesex County Council Education Committee
- Ministry of Aviation
- Ministry of Transport
- National Physical Laboratory (D.S.I.R.)
- Radiological Protection Service

This British Standard, having been approved by the Nuclear Energy Industry Standards Committee and endorsed by the Chairman of the Engineering Divisional Council, was published under the authority of the General Council on 13 September 1963

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Foreword

This standard makes reference to the following British Standards:

BS 2585, *Dimensions of dental X-ray films*.

BS 2L72, *Aluminium-coated aluminium-copper-magnesium-silicon-manganese alloy sheets and strips (solution treated and aged at room temperature)*.

The International Commission on Radiological Protection recommend that the amount of ionizing radiation received by personnel should be systematically checked to ensure that the doses received are less than the maximum permissible values. One way of doing this is by tests with photographic films. The workers in hospitals or industrial establishments who are liable to be exposed to ionizing radiations, e.g. X-rays or radiations from radioactive substances, may be required to carry, for an appropriate period, film badges, comprising small X-ray films in suitable holders. The film badges are generally pinned to the outer clothing. The films are then developed under standard conditions together with other films of the same emulsion batch, which have been exposed to known doses of a known quality of radiation. The optical densities of the processed films are measured with a densitometer and from the curve of net density against dose, which is obtained from the films having known exposures, the dose received by any of the films can be determined.

It is imperative that any specific combination of film and holder shall be calibrated to obtain data for assessing exposed films.

The purpose of this British Standard is to establish a standard size of monitoring film, and the essential requirements of one suitable design of holder. Alternative basic approaches could possibly be employed, which could form the subject of separate British Standards if and when they are developed.

NOTE 1 Dimensions given in British units are to be regarded as the standard. Approximate metric equivalents are given for guidance. More accurate conversions should be based on the tables in BS 350, "*Conversion factors and tables*".

NOTE 2 In place of the customary, but incorrect, use of the pound and kilogramme as units of force, the units called pound-force (abbreviation lbf) and kilogramme-force (kgf) have been used in this standard. They are those forces which, when acting on bodies of mass one pound and one kilogramme respectively, give them an acceleration equal to that of standard gravity.

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.

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 7 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.