

Medical information on human reaction to skin contact with hot surfaces

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Foreword

This Published Document is published by authority of the Board of BSI according to the BSI disputes procedure in the absence of agreement in the Technical Committee otherwise responsible.

The aim of this Published Document is to assist BSI Technical Committees responsible for the preparation and revision of all British Standards in which human reaction to skin contact with hot surfaces has to be taken into account. For heated domestic equipment, BS 4086:1966 "*Recommendations for maximum surface temperatures of heated domestic equipment*" also gives guidance.

BS 0 charges Technical Committees when dealing with safety to strike a balance, in deciding on levels of acceptable risk, between the costs of accidents and injuries and manufacturing costs. This requires many factors to be taken into account. Important in such considerations will be any available statistics on the frequency and costs of pain and injury caused through skin contact with hot surfaces and the changes that can be made to reduce hazard by modifications to design criteria. Equally important will be the practicability of, and the costs arising from, such modifications.

Each Technical Committee will need to judge these issues on their merits for the particular product under consideration. In many cases, striking the balance by means of quantitative cost/benefit data will not be possible and the Technical Committee will need to make a subjective judgement drawing on advice, for example from manufacturers, on cost and technical practicability, and from users of the product. In any event, for heated domestic equipment the temperatures given in BS 4086 are regarded as the maxima recommended for non-working surfaces that may be touched, but lower temperatures should be adopted for these surfaces where possible and appropriate, where such temperatures can be shown to be economically justified and technically practicable.

In order to assist committees in these judgements, this Published Document gives such medical evidence about human reaction to skin contact with hot surfaces as is currently available and is endorsed by the British Medical Association. However, the model from which the evidence is derived is a simplified one. In practice, particularly in cases of short period contact, the evidence may be conservative, that is it may indicate lower temperatures than may be tolerated in some instances. Moreover, the medical evidence is only one factor to be considered. In order to assist committees responsible for heated domestic equipment further research is being undertaken in the next two years:

- a) to analyse accident statistics on burns due to contact with surfaces of heated domestic equipment;
- b) to investigate the current performance, in the UK market, of heated domestic equipment in respect of surface temperatures; *and*
- c) to establish the technical feasibility and costs of producing heated domestic equipment with a range of temperatures for non-working surfaces lower than the maxima given in BS 4086.

When the results of the research are available, BS 4086 will be reviewed urgently in the light of the new data and all existing information, including that given in this Published Document, and revised as necessary. The intention is that this Published Document will be retained to give a continuing basis for guidance to all Technical Committees. It will be reviewed regularly and updated to reflect the results of any further medical research.

Technical Committees, in drawing up product specifications, should attempt, through advances in technology, to adopt temperatures as low as are practically and economically achievable for appropriate non-working surfaces that may be touched and to maintain progress in that direction.

Summary of pages

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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.

