

Australian Standard[®]

**Guide to managing product
design**

This Australian Standard was prepared by Committee QR/8, Quality Systems. It was approved on behalf of the Council of Standards Australia on 27 March 1991 and published on 10 June 1991.

The following interests are represented on Committee QR/8:

- Australian Chamber of Manufactures
- Australian Electrical and Electronic Manufacturers Association
- Australian Organization for Quality
- Australian Road Research Board
- Bureau of Steel Manufacturers of Australia
- Department of Defence
- Department of Industry, Technology and Commerce
- Department of Primary Industries and Energy
- Department of Transport and Communications
- Electricity Supply Association of Australia
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First published as AS 3950—1991.

PREFACE

This Standard is identical with and has been reproduced from BS 7000:1989, *Guide to managing product design*, published by the British Standards Institute. It has been adopted under the direction of the Quality Standards Advisory Committee.

The text of the British Standard has been approved for publication as an Australian Standard without deviation. However where the words 'British Standard' appear in this Standard they should be read as 'Australian Standard' and references to other publications should be replaced by references to Australian Standards as follows:

<i>Reference to British Standard</i>		<i>Australian Standard</i>	
BS		AS	
2495	Specification for protective helmets for vehicle users (high protection)	1698	Protective helmets for vehicle users
5361	Protective helmets for vehicle users	1698	Protective helmets for vehicle users
5240	Industrial safety helmets	1801	Industrial safety helmets
5750 Part 1:	Quality systems — Specification for design / development, production, installation and servicing	3901	Quality systems for design/development, production, installation and servicing
5750 Part 0: Section 0.2	Quality systems — Guide to quality management and quality system elements	3904.1	Quality management and quality system elements — Guidelines
6046	Use of network techniques in project management	—	

This Standard gives guidance on the management of product design at all levels for all design organizations and all products. Although the principles outlined may seem to be presented in a basic and over-simplistic manner, in reality one should not lose sight of these first principles which are fundamental to a successful product.

The Standard however places insufficient emphasis on the design brief which should provide for the customer's needs resulting in a product that gives customer satisfaction at an acceptable price. The Standard, whilst quoting alignment with AS 3901, fails to use a number of key terms such as design input, design output, and to address elements such as design verification. The specification and design should be such that the product is producible, verifiable and controllable under the proposed production, installation, commissioning or operational conditions.

Australian Committee QR/8 in adopting this British Standard does so in order to promote the concepts of design management systems for Australian industry and with the awareness that subsequent revisions may incorporate changes obtained from consumer feedback, which will be welcomed, in the light of their experience.

The Standard may be used in conjunction with the design assurance provisions of AS 3901.

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Guide to managing product design

Section 1 General

0 Introduction

Product design is the formative stage of the manufacturing process. It should be used to meet the reasonable and foreseeable requirements of the market while using the available resources with economy.

Any product competes in its market according to performance, appearance, price, delivery, reliability, safety and maintainability. All of these depend fundamentally upon the design of the product.

The performance and appearance of many products could be substantially improved, which in turn would have the effect of increasing market appeal and reducing production costs. A poorly designed product may damage a company's reputation and prospects for growth, particularly if the product is unreliable, unsafe or difficult to maintain and repair. The benefits derived from improving product design are therefore considerable and, if they are to be realized, product design needs to be managed effectively.

This British Standard sets out the elements of the task for the following groups of people:

- (a) senior management;
- (b) project managers;
- (c) design managers and designers.

In a large organization the functions will probably be undertaken by different members of staff. In a small organization they may form overlapping roles, perhaps being undertaken by a single person, but are nevertheless distinct and different. All the staff concerned should be aware of the functions and it is recommended that they should understand the full content of this British Standard while paying particular attention to the section that is appropriate to them.

This British Standard provides guidance and it is not a specification. The recommendations and check lists are believed to be generally applicable, but managers are advised to use the guidance given in accordance with the circumstances of their own operation.

The prerequisites of effective management, in the context of this standard, are:

- (1) sincere and visible commitment to good product design on the part of management at all levels, including the most senior;
- (2) the motivation of all staff involved;
- (3) the provision of clear objectives;

(4) the provision of adequate resources in terms both of personnel and equipment;

(5) the provision of organizational systems.

1.1 Scope

This British Standard gives guidance on the management of product design at all levels, for all design organizations and all products.

Guidance is given only on the application of general management principles and techniques to the management of design. Discussion of the techniques themselves (e.g. management of people, time, etc.) and their application to areas other than design and the design process itself are excluded. Where appropriate, reference is made to other documents for guidance on general management techniques.

Management of the design of anything other than products is not included, although the guidance given in this standard may be relevant in many other areas.

Guidance on procedures required to meet statutory requirements, e.g. health and safety or product liability, is not intended to be comprehensive and reference should be made to other documents where appropriate.

This standard is complementary to BS 5750: Part 1, to which reference should be made.

NOTE: The titles of the publications referred to in this standard are listed at the end of the document.

1.2 Definitions

For the purposes of this British Standard the following definitions apply.

1.2.1 design (in the context of product design)

1.2.1.1 (verb). To generate information from which a required product can become a reality.

1.2.1.2 (noun). The set of instructions (e.g. specifications, drawings and schedules) necessary to construct a product.

1.2.2 design review

A formal, documented and systematic critical study of a design proposal by specialists as required (who may not necessarily be engaged in the design).