
**Ergonomics — General approach,
principles and concepts**

Ergonomie — Approche générale, principes et concepts



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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 26800 was prepared by Technical Committee ISO/TC 159, *Ergonomics*, Subcommittee SC 1, *General ergonomics principles*.

Introduction

Human, technological, economic, environmental and organizational factors all affect the behaviour, activities and well-being of people in work, domestic and leisure contexts. The science of ergonomics has evolved from its origins in the context of work to embrace many other fields of application, such as home and leisure. However, whatever the context, the underlying principles of ergonomics remain the same, although the relative emphasis placed on them will vary. These principles are fundamental to the design process wherever human involvement is expected, in order to ensure the optimum integration of human requirements and characteristics into a design. This International Standard considers systems, users, workers, tasks, activities, equipment and the environment as the basis for optimizing the match between them. These principles and concepts serve to improve safety, performance and usability (effectiveness, efficiency and satisfaction), while safeguarding and enhancing human health and well-being, and improving accessibility (e.g. for elderly persons and persons with disabilities).

Ergonomics covers a wide range of issues, including physical, cognitive, social and organizational. These are ideally addressed within an integrated framework. A substantial number of ergonomics standards have been developed to cover specific issues and different application domains. All depend upon the basic principles and concepts that are fundamental to the ergonomics approach to design. This International Standard has been developed in order to provide an integrated framework, bringing together the basic principles and concepts of ergonomics in one document, and thus providing a high-level view of the way in which ergonomics is applied.

NOTE 1 ISO 6385^[2] remains a high-level International Standard for work systems.

NOTE 2 A complete list of current published ergonomics International Standards can be accessed via http://www.iso.org/iso/iso_catalogue/catalogue_tc/catalogue_tc_browse.htm?commid=53348&published=on&includesc=true.

Ergonomics — General approach, principles and concepts

1 Scope

This International Standard presents the general ergonomics approach and specifies basic ergonomics principles and concepts. These are applicable to the design and evaluation of tasks, jobs, products, tools, equipment, systems, organizations, services, facilities and environments, in order to make them compatible with the characteristics, the needs and values, and the abilities and limitations of people.

The provisions and guidance given by this International Standard are intended to improve the safety, performance, effectiveness, efficiency, reliability, availability and maintainability of the design outcome throughout its life cycle, while safeguarding and enhancing the health, well-being and satisfaction of those involved or affected.

The intended users of this International Standard are designers, ergonomists and project managers, as well as managers, workers, consumers (or their representatives) and procurers. It also serves as a reference standard for standards developers dealing with ergonomics aspects.

This International Standard provides the basis for other, more detailed, context-specific ergonomics International Standards.

2 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

2.1

accessibility

extent to which products, systems, services, environments and facilities can be used by people from a population with the widest range of characteristics and capabilities to achieve a specified goal in a specified context of use

NOTE 1 Context of use includes direct use or use supported by assistive technologies.

NOTE 2 Adapted from ISO/TR 22411:2008, definition 3.6.

2.2

ergonomics

human factors

scientific discipline concerned with the understanding of interactions among human and other elements of a system, and the profession that applies theory, principles, data and methods to design in order to optimize human well-being and overall system performance

NOTE This definition is consistent with that given by the International Ergonomics Association^[21].

2.3

environment

physical, chemical, biological, organizational, social and cultural factors surrounding one or more persons