
Ergonomic principles in the design of work systems

Principes ergonomiques de la conception des systèmes de travail



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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.

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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 6385 was prepared by Technical Committee ISO/TC 159, *Ergonomics*, Subcommittee SC 1, *Ergonomic guiding principles*.

This second edition cancels and replaces the first edition (ISO 6385:1981), which has been technically revised.

Introduction

Technological, economic, organizational and human factors affect the work behaviour and well-being of people as part of a work system. Applying ergonomic knowledge in the light of practical experience in the design of a work system is intended to satisfy human requirements.

This International Standard provides a basic ergonomic framework for professionals and other people who deal with the issues of ergonomics, work systems and working situations. The provisions of this International Standard will also apply to the design of products, e.g. consumer products.

In the design of work systems in accordance with this International Standard, the body of knowledge in the field of ergonomics is taken into account. Ergonomic evaluations of existing or new work systems will show the need for, and encourage attention to, the role of the worker within those systems.

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Ergonomic principles in the design of work systems

1 Scope

This International Standard establishes the fundamental principles of ergonomics as basic guidelines for the design of work systems and defines relevant basic terms. It describes an integrated approach to the design of work systems, where ergonomists will cooperate with others involved in the design, with attention to the human, the social and the technical requirements in a balanced manner during the design process.

Users of this International Standard will include managers; workers (or their representatives); and professionals such as ergonomists, project managers and designers who are involved in the design or redesign of work systems. Those who use this International Standard may find a general knowledge of ergonomics (human factors), engineering, design, quality and project management helpful.

The term “work system” in this International Standard is used to indicate a large variety of working situations. The intention is to improve, (re)design or change work systems. A work system involves a combination of people and equipment, within a given space and environment, and the interactions between these components within a work organization. Work systems vary in complexity and characteristics. Some examples of work systems are: a machine with a single person; a process plant including its operating and maintenance personnel; an airfield with users and personnel; an office with its workers; and computer-based interactive systems. The observance of ergonomic principles applies also to the installation, adjustment, maintenance, cleaning, repair, removal and transport of work systems.

The systems approach in this International Standard gives guidance to the users of this standard in existing and new situations.

The definitions and ergonomic guiding principles specified in this International Standard apply to the design of optimal working conditions with regard to human well-being, safety and health, including the development of existing skills and the acquisition of new ones, whilst taking into account technological and economic effectiveness and efficiency.

While the principles in this International Standard are oriented to the design of work systems, they are applicable to any field of human activity, e.g. in the design of products for domestic and leisure activities.

NOTE This International Standard is considered to be the core ergonomic standard from which many others on specific issues are derived.

2 Terms and definitions

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

2.1

allocation of functions

process of deciding how system functions shall be implemented, by humans, by equipment and/or hardware and/or software

2.2

design population

designated group of workers delimited as a percentile range of the general population, defined according to relevant characteristics, e.g. gender, age, skill level, etc.