

# Workplace ergonomics — A management and implementation Standard



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# Preface

This is the first edition of CSA Z1004, *Workplace ergonomics — A management and implementation Standard*.

This Standard sets out requirements and provides guidance for the systematic application of ergonomics to the development, design, use, management, and improvement of work systems through the implementation of an Ergonomics Process. The objective of this Standard is to enable an organization to enhance worker health, safety, and well-being and optimize system performance to prevent occupational injuries, illnesses, and fatalities and/or reduce the severity of harm related to occupational activities and work environments.

To facilitate its use and adoption, this Standard is aligned with the Plan-Do-Check-Act (PDCA) continuous improvement model found in occupational health and safety management systems (OHSMS), such as CAN/CSA-Z1000.

This Standard was prepared by the Technical Committee on Workplace Ergonomics under the jurisdiction of the Strategic Steering Committee on Occupational Health and Safety, and has been formally approved by the Technical Committee.

March 2012

## Notes:

- (1) Use of the singular does not exclude the plural (and vice versa) when the sense allows.
- (2) Although the intended primary application of this Standard is stated in its Scope, it is important to note that it remains the responsibility of the users of the Standard to judge its suitability for their particular purpose.
- (3) This publication was developed by consensus, which is defined by CSA Policy governing standardization — Code of good practice for standardization as “substantial agreement. Consensus implies much more than a simple majority, but not necessarily unanimity”. It is consistent with this definition that a member may be included in the Technical Committee list and yet not be in full agreement with all clauses of this publication.
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  - (d) rationale for the change.



# Z1004-12

# **Workplace ergonomics — A management and implementation Standard**

## **0 Introduction**

### **0.1 General**

Ergonomics (or human factors) is the discipline concerned with the understanding of interactions among humans and other elements of a system, and the application of theory, principles, data, and methods of design to enhance worker health, safety, and well-being and optimize system performance. For the purposes of this Standard, the term “Ergonomics” is being used interchangeably with the term “human factors”.

The science and Application of Ergonomics can be used to improve many aspects of the interactions of people with jobs, systems, products, and environments. This Standard describes how ergonomics is integrated into occupational health and safety and design using an Ergonomics Process to improve occupational health and safety outcomes and to optimize work system design.

This Standard is structured for use with an occupational health and safety management system (OHSMS), such as CAN/CSA-Z1000; however, it may also be used independently or with other health and safety activities as it employs an identification, elimination, assessment, and control structure. This Standard is compatible with the Plan-Do-Check-Act (PDCA) model found in CAN/CSA-Z1000. This Standard provides an overall framework for addressing preventive and protective measures, worker participation, training, design, procurement issues, documentation, and legal and other requirements.

See [Figure 1](#).

### **0.2 Principles of an effective Ergonomics Process**

Within the scope of this Standard, the following principles form an integral part of an effective Ergonomics Process to enhance worker health, safety, and well-being, and optimize system performance:

- (a) Worker health, safety, and well-being and system performance are enhanced through the use of ergonomics, by considering interactions between people and the components of the work system, such as tasks, equipment, workspace, work organization, and the environment.
- (b) Ergonomics has its greatest benefit when used early in the design of a work system rather than being used to solve problems after the design is complete. Ergonomics is also beneficial in the redesign of an existing work system.
- (c) The user-centred approach is a key attribute of ergonomics and ensures that a broad range of worker characteristics and requirements are accommodated.
- (d) Worker participation is an essential aspect of the Ergonomics Process in the organization. Workers and their representatives provide valuable knowledge in work system design when they are involved.
- (e) A workplace Ergonomics Process operates effectively when it is integrated within the organization’s OHSMS.

## 0.3 Using this Standard

### 0.3.1 General

The Ergonomics Process consists of the commitment, leadership, planning, implementation, and continual improvement necessary to identify and eliminate hazards and to assess and control risks using ergonomics principles. It operates within the OHSMS, where one exists, to enhance worker health, safety, and well-being and optimize system performance.

The implementation element of the Ergonomics Process includes the Application of Ergonomics, to identify and eliminate hazards, and to assess and control risks in a work system to enhance worker health, safety, and well-being and optimize system performance. This occurs at each stage of design and operation of a work system. Design occurs during any project or undertaking where changes are being introduced. The Application of Ergonomics emphasizes prevention of injuries, illnesses, and errors in the workplace; it is further described in detail in [Clause 7](#).

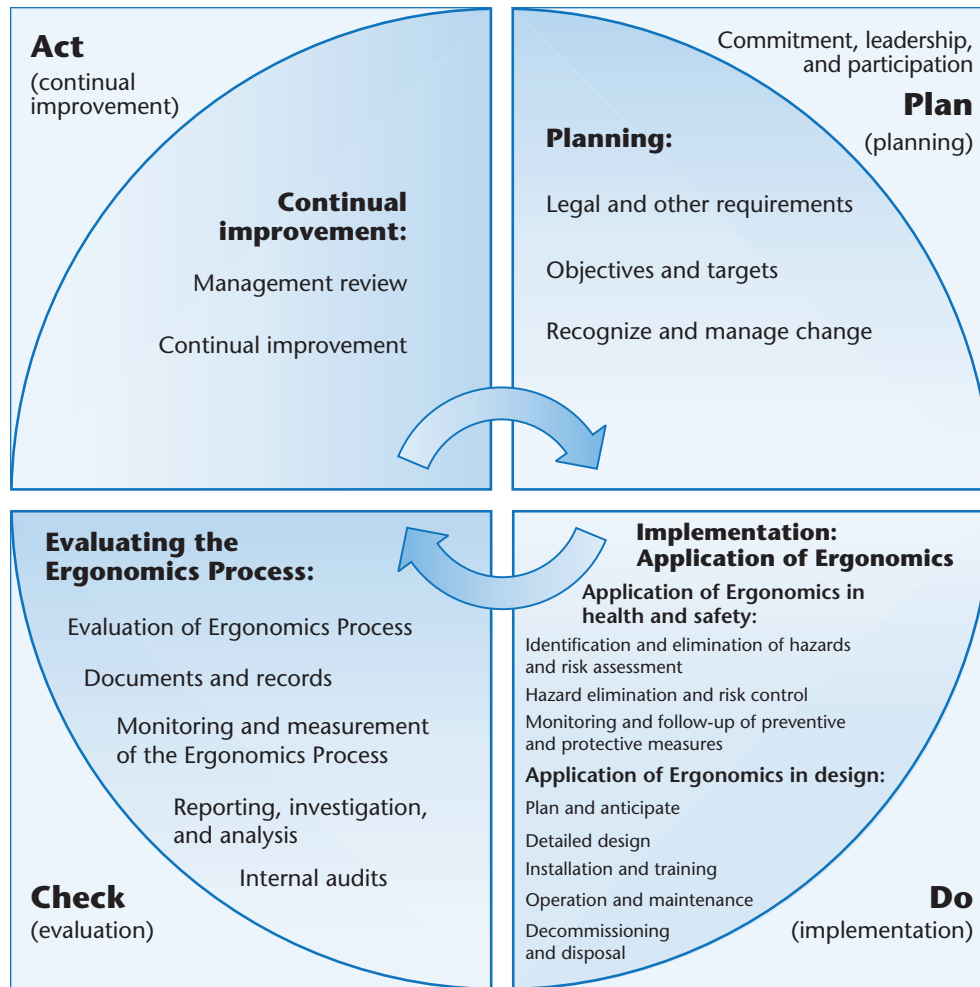
Many organizations first develop awareness of the use of ergonomics in a reactive mode, when problems arise with worker health and safety. The emphasis should be on the proactive use of ergonomics to design improved processes, systems, or work organization. This Standard requires the Ergonomics Process to be applied in both types of conditions (i.e., proactive and reactive).

The implementation of this Standard should be customized by each organization based upon the nature of their work and the size and location of their operations. This Standard applies to all types and sizes of organizations, regardless of whether or not a formal OHSMS is in place.

### 0.3.2 Structure of this Standard

The informative guidance material (see [Annex A](#)) is intended to assist users in complying with the Standard. In [Annex A](#), the provisions, which are reproduced from the Standard, are included in text boxes. The guidance information is given below the text boxes to which it applies.

[Annex B](#) provides information and examples of evidence-based tools and checklists. The content included in [Annex B](#) is not intended to be exhaustive and other such tools and checklists demonstrated to be equally effective through professional use, best practice, or citations in the scientific literature may also be used where applicable. The application of such evidence-based tools and checklists will enable organizations to meet the objectives of this Standard.



**Figure 1**  
**Elements of an OHSMS and the Ergonomics Process**  
(See [Clause 0.1](#).)

## 1 Scope and objective

### 1.1 Scope

#### 1.1.1

This Standard specifies requirements and provides guidance for the systematic Application of Ergonomics to the development, design, use, management, and improvement of work systems through the implementation of an Ergonomics Process.

#### 1.1.2

This Standard does not apply to medical management programs or to aspects that could be considered part of a medical management program, such as therapeutic or clinical interventions.