

# INTERNATIONAL STANDARD

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## **Ergonomic principles related to mental work-load — General terms and definitions**

*Principes ergonomiques concernant la charge de travail mental —  
Termes généraux et leurs définitions*



Reference number  
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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.

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.

International Standard ISO 10075 was prepared by Technical Committee ISO/TC 159, *Ergonomics*, Sub-Committee SC 1, *Ergonomic guiding principles*.

Annex A forms an integral part of this International Standard.

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## Introduction

This International Standard represents an extension of ISO 6385:1981, *Ergonomic principles of the design of work systems*, 3.7 to 3.9 — with special respect to mental work-load, describing terms and concepts in more detail because of the specific consequences that have to be taken into account in this domain.

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# Ergonomic principles related to mental work-load — General terms and definitions

## 1 Scope

This International Standard defines terms in the field of mental work-load, covering mental stress and mental strain, and specifies the relations between the concepts involved.

It applies to the design of working conditions with respect to mental work-load and is intended to promote a common usage of terminology between experts and practitioners in the field of ergonomics as well as in general.

It does not address methods of measurement and principles of task design, which are or will be dealt with in other International Standards.

## 2 General concepts

Any activity — even a predominantly physical one — can impose mental stress<sup>1)</sup>. “Mental stress” in this case is a term employed to designate any external influence impinging upon human beings and affecting them mentally. Mental stress induces processes of increasing or decreasing mental strain within human beings. The immediate consequences of mental strain are facilitating effects on the one hand, and mental fatigue and/or fatigue-like states on the other. As an indirect consequence of mental strain there may be practice and training effects. The consequences of mental strain mentioned here may differ in form and intensity, depending on individual and situational preconditions.

In this International Standard the expression “mental” is used wherever processes of human experience and behaviour are referred to. “Mental” in this sense refers to cognitive, informational, and emotional processes in the human being. The term mental is used because these aspects occur interrelatedly and can and should not be dealt with separately in practice.

## 3 Definitions

**3.1 mental stress:** The total of all assessable influences impinging upon a human being from external sources and affecting it mentally<sup>2)</sup>.

**3.2 mental strain:** The immediate effect of mental stress within the individual (not the long-term effect) depending on his/her individual habitual and actual preconditions<sup>3)</sup>, including individual coping styles.

### 3.3 consequences of mental strain<sup>3)</sup>

#### 3.3.1 facilitating effects

**3.3.1.1 warming-up effect:** A frequent consequence of mental strain which soon after the activity has started results in a reduction of the effort required to perform that activity relative to the effort required initially.

1) See annex A, clause A.4.

2) See annex A.

3) The order of defining the following terms does not imply any functional relationship.