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JAPANESE INDUSTRIAL STANDARD

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

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

Z 8502-1994
(ISO 10075:1991)

Foreword for Japanese Industrial Standard

This Japanese Industrial Standard is prepared based on ISO 10075 (Ergonomic principles related to mental work-load — General terms and definitions) issued in 1991 as the first edition without changing the technical contents but changing only the form to unite into the general Japanese standards for glossary of terms.

Introduction

This Standard represents an extension of ISO 6385: 1981, Ergonomic principles in 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.

1. Scope

This 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 standards.

2. General concepts

Any activity — even a predominantly physical one — can impose mental stress¹⁾. "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 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.

¹⁾ See Annex A, clause A.4.

3. Definitions

3.1 mental stress

No.	Term (Japanese characters)	Reading	Definition	English equivalent
3.1	精神的負担	SEISINTEKI HUKA	The total of all assessable influences impinging upon a human being from external sources and affecting it mentally ²⁾ .	mental stress

3.2 mental strain

No.	Term (Japanese characters)	Reading	Definition	English equivalent
3.2	精神的負担	SEISINTEKI HUTAN	The immediate effect of mental stress within the individual (not the long-term effect) depending on his/her individual habitual and actual preconditions ²⁾ , including individual coping styles.	mental strain

3.3 consequences of mental strain ³⁾

3.3.1 facilitating effects

No.	Term (Japanese characters)	Reading	Definition	English equivalent
3.3.1.1	ウォーミングアップ効果	WÔMINGUAPPU KÔKA	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.	warming-up effect

²⁾ See Annex A.

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