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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 15241.1-2023

Replacing GB/T 15241-1994

**Ergonomic principles related to mental workload - Part 1:
General terms and methods for measuring and assessing
mental workload**

与心理负荷相关的工效学原则 第1部分：心理负荷术语与测评方法
(English Translation)

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents" Drafting:

This document is Part 1 of GB/T 15241 "Ergonomic Principles Related to Mental Load":
GB/T 15241 has been released with Lower part:

---Part 1: Mental load terminology and assessment methods;

---Part 2: Design Principles:

This document replaces GB/T 15241-1994 "Terms related to ergonomics and mental load" and is consistent with GB/T 15241-1994 in addition to structural adjustments and editorial changes, the main technical changes are as follows:

a) Added terms and definitions of "confidence interval"; "facilitation effect" and "damage

effect" that have an important impact on mental stress from the time dimension it differentiates and explains in detail "should", and adds terms and definitions such as "learning", "ability development", "stress response" and "job burnout":

meaning; added a description of the emotional experience of "psychological satisfaction", and explained the original related terms in categories (see Chapter 3);

b) Added a chapter on psychological stress related analysis (see Chapter 4);

c) Added a chapter on measurement and assessment methods of mental load (see Chapter 5):

This document refers to ISO 10075-1:2017 "Ergonomic principles related to mental load Part 1: Basic issues and concepts, terminology and Definitions" and ISO 10075-3:2004 "Ergonomic principles related to mental load - Part 3: Methods for the measurement and assessment of mental load "Guidelines and Requirements" is drafted, and the degree of consistency is non-equivalent:

Please note that some content in this document may be subject to patents: The publisher of this document assumes no responsibility for identifying patents:

Introduction

This document focuses on mental load and its measurement and assessment: Since there are specific consequences to consider in this area, it is necessary to more Plus a detailed description of basic issues, concepts and terminology as well as measurement and assessment methods in the field of mental load:

The concept of psychological load mainly includes psychological pressure, mental tension and its impact: Because of psychological knowledge in both spoken and scientific terminology There are different conceptual expressions of load, psychological pressure and mental stress: Therefore, it is necessary to carry out relevant concepts and terminology in the field of ergonomics:

standardization: In this document, psychological load is considered a general term for psychological stress and mental stress: Psychological stress is considered a neutral technique language, rather than workload and other factors in the method that produce negative results: In this way, in the engineering field, "pressure" and "tension" are often used equally: Therefore, in this document, psychological stress is the cause of mental stress, and mental stress is the result of stress reflected in the individual:

This is consistent with the use of the term in other ergonomic standards, such as thermal stress:

At the terminological level of this document, mental load is considered as a general or general term, referring to all concepts and constructs mentioned in this document, and and

does not have its own specific or standard meaning in the document, which is consistent with the usage of the term in ergonomics and its applications, where it can refer to psychological pressure, mental tension and its effects, which can be both causes and results: Therefore, in this document, the term "mental load" is no longer used. Seen as a technical term, it is just a general name for the field:

Note: Appendix A provides additional explanation of terms and definitions:

Since psychological load is part of the total load, users of this document are usually also familiar with the concepts and concepts in the national standard GB/T 16251 terms: Although this document clearly gives the technical information involved in the construction of the environment, evaluation and selection of measurement tools related to mental load assessment, information, but it does not specify which measurement tool to use, such as psychological scales or physiological measurement methods: The selection of specific measurement tools needs to be based on the specific information provided:

body information to determine: The concepts covered in this document are important for the understanding of each clause:

GB/T 15241 consists of 2 parts:

---Part 1: Mental load terminology and assessment methods: The terminology related to psychological load is sorted out, and the psychological load evaluation phase is clearly given:

The technical information involved in the relevant environment construction, evaluation and measurement tool selection is proposed, and different aspects of mental load measurement tools are proposed:

Require: It aims to clarify the concept of mental load and provide information for the development of mental load measurement tools:

The usability evaluation process provides technical specifications:

---Part 2: Design Principles: Guiding principles in the design of work systems related to mental load are given, including general principles and design guidelines for reducing fatigue, monotony, decreased alertness, satiety, etc:

Ergonomic principles related to mental load Part 1: Mental Load Terminology and Assessment Methods

1 Scope

This document defines relevant terms in the field of psychological load, including psychological stress and mental stress, as well as the short-term and long-term effects of mental stress:

response, positive and negative consequences, clarifying the relationship between these concepts: At the same time, the guidelines and requirements for psychological load measurement and assessment methods were established:

requirements, and specific requirements for measurement tools were put forward: This document provides guidance for selecting appropriate measurement tools and for assessing and measuring psychological load:

Improved communication between relevant parties provides information support:

This document is applicable to the design of working conditions related to mental load and is intended to promote cooperation between experts and practitioners in the field of ergonomics and the commonality of terminology in related basic fields: Mainly suitable for ergonomics experts who have a theoretical background in relevant research methods and the use of and psychologists, occupational health professionals, and physiologists trained in the interpretation of results when developing or evaluating methods for assessing mental workload:

You can get the information you need during the process: Also applicable to non-professionals such as employers, employees and their representatives, system administrators and equipment Designers, as well as public institutions, will find useful information for their orientation in the field of assessment and measurement of mental load, such as which methods are available and which standards Standards relate to assessment and measurement tools, and which tools meet the needs and are available:

This document can provide guidance on selecting appropriate methods in different situations: According to the needs of different purposes, situations and accuracy levels, users Choose from a wide range of methods for effective and efficient measurement: This document provides information to guide users in evaluating the best measurement method:

2 Normative reference documents

This document has no normative references:

3 Terms and definitions

3.1

Terms and definitions related to mental load 3.1.1 mental stress the sum of all evaluable effects on the human psyche caused by external factors:

Note 1: Since psychological stress in this document refers to the sum of evaluable factors that have an impact on an individual's psychology, the term "psychological stress" is used in spoken language:

The definition of "psychological stress" in the Act is inconsistent with that in this document: