



BSI Standards Publication

**Ergonomics — Application
document for International
Standards on manual handling
(ISO 11228-1, ISO 11228-2
and ISO 11228-3) and
evaluation of static working
postures (ISO 11226)**

National foreword

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TECHNICAL REPORT

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Ergonomics — Application document for International Standards on manual handling (ISO 11228-1, ISO 11228-2 and ISO 11228-3) and evaluation of static working postures (ISO 11226)

*Ergonomie — Document pour l'application des Normes
Internationales sur la manutention manuelle (ISO 11228-1, ISO
11228-2 et ISO 11228-3) et l'évaluation des positions statiques de
travail (ISO 11226)*



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ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
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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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2. www.iso.org/directives

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The committee responsible for this document is ISO/TC 159, *Ergonomics*, Subcommittee SC 3, *Anthropometry and biomechanics*.

Introduction

The ISO 11228 series and ISO 11226 establish ergonomic recommendations for different manual handling tasks and working postures.

All their parts apply to occupational and non-occupational activities. The standards will provide information for designers, employers, employees and others involved in work, job and product design, such as occupational health and safety professionals.

ISO 11228 consists of the following parts, under the general title, *Ergonomics — Manual handling*:

- *Part 1: Lifting and carrying;*
- *Part 2: Pushing and pulling;*
- *Part 3: Handling of low loads at high frequency.*

ISO 11226, *Ergonomics — Evaluation of static working postures*, gives recommended limits for static working postures with no, or with minimal external force exertion, while taking into account body angles and duration. It is designed to provide guidance on the assessment of several task variables by evaluating the health risks for the working population.

While ISO 11228 and ISO 11226 are each self-contained with respect to data and methods, users may need guidance in selecting or using the standards in their specific application.

This Technical Report serves as an application guide that offers a simple risk assessment methodology for small and medium enterprises and for non-professional activities. For expert users, more detailed assessment methodologies are presented in the annexes.

Ergonomics — Application document for International Standards on manual handling (ISO 11228-1, ISO 11228-2 and ISO 11228-3) and evaluation of static working postures (ISO 11226)

1 Scope

This Technical Report is an application document that guides users of the ISO 11228 series of International Standards, which address manual handling, and ISO 11226, which deals with static working postures. Specifically, it guides the user and provides additional information in the selection and use of the appropriate standards.

Depending upon whether specific risks are present, it is intended to assist the user to decide which standards should be applied.

It has a dual scope:

- a) To provide all users, and particularly those who are not experts in ergonomics, with criteria and procedures:
 - to identify the situations in which they can apply the standards of the ISO 11228 series and/or ISO 11226;
 - according to the criteria given in the relative standard, to provide a “quick assessment” method to easily recognize activities that are “certainly acceptable” or “certainly critical”. If an activity is “not acceptable” it is necessary to complete a detailed risk-assessment as set out in the standard, but it should be possible to continue with the subsequent actions. Where the quick-assessment method shows that the activity risk falls between the two exposure conditions then it is necessary to refer to the detailed methods for risk assessment set out in the relevant standard.

This scope and approach is illustrated in the flowchart in [Figure 1](#) and is described in the main text of this Technical Report.

The user will be required to answer a short series of practical “key questions” to assist him or her in selecting and applying the appropriate standard(s).

It is emphasized that the use of the quick-assessment method is best completed using a participatory approach involving workers in the enterprise. Such involvement is considered essential to identify effectively priorities for dealing with the different hazard and risk conditions and, where necessary, to identify effective risk reduction measures.

- b) To provide all users, especially those who have sufficient experience in ergonomics, or are sufficiently familiar with the standards of the ISO 11228 series, with details and criteria for applying the risk assessment methods proposed in the original standards of the series. This information is fully consistent with the methods proposed in the standards, and does not introduce any change to the application of the mathematical risk level calculations defined in the existing standards. It has been collated from additional analyses to ease the use of the standards.

This second part of the scope will be achieved through [Annexes A, B, and C](#) related to ISO 11228-1, ISO 11228-2 and ISO 11228-3, respectively. These annexes provide information relevant to the practical application of methods and procedures presented in ISO 11228 series based on application experiences of the standards. Some modifications of the methods explained in the standards are described in the present Technical Report, which are intended to be supplemental to the users,