INTERNATIONAL STANDARD

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Safety of machinery — Safety distances to prevent danger zones being reached by the lower limbs

Sécurité des machines — Distances de sécurité pour empêcher l'atteinte des zones dangereuses par les membres inférieurs

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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 13853 was prepared by Technical Committee ISO/TC 199, *Safety of machinery*. It has been published by the European Committee for Standardization (CEN) as EN 811:1996.

Annexes A and B of this International Standard are for information only.

Introduction

In accordance with ISO/TR 12100-1, in general machinery is said to be safe if it is probable that the machinery can perform its function, to be transported, installed, adjusted, maintained, dismantled and disposed of under the conditions of its intended use without causing injury or damaging human health.

One method of eliminating or reducing risks caused by machinery is to make use of safety distances preventing danger zones from being reached. This International Standard specifies safety distances only for the lower limbs. Safety distances for the upper limbs are covered by ISO 13852.

Sometimes reasonably foreseeable reach situations can occur, e.g. while persons

— try to use a foot to clean out discharge and/or feed openings, or

— operate foot-controlled machinery.

In specifying safety distances to prevent lower-limb access (see clause 4) and distances to impede free access (see clause 5), a number of aspects have to be taken into consideration, such as:

— reach situations of the lower limbs occurring when machinery is being used;

— reliable surveys of anthropometric data, taking into account ethnic groups likely to be found in the countries concerned;

— biomechanical facts, such as compression and stretching of parts of the human body and limits of joint rotation;

— technical and practical aspects.

If these aspects were further developed, the current state of the art reflected in this International Standard could be improved.