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Respiratory protective devices — Human factors —

Part 2: Anthropometrics

*Appareils de protection respiratoire — Facteurs humains —
Partie 2: Anthropométrie*



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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.

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The main task of technical committees is to prepare International Standards. 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.

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Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO/TS 16976-2 was prepared by Technical Committee ISO/TC 94, *Personal safety — Protective clothing and equipment*, Subcommittee SC 15, *Respiratory protective devices*.

ISO/TS 16976 consists of the following parts, under the general title *Respiratory protective devices — Human factors*:

- *Part 1: Metabolic rates and respiratory flow rates* [Technical Specification]
- *Part 2: Anthropometrics* [Technical Specification]

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Introduction

For an appropriate design, selection and use of respiratory protective devices, basic physiological demands of the user must be considered. Type and intensity of work affect the metabolic rate (energy expenditure) of the wearer. Weight and weight distribution of the device on the human body can also influence metabolic rate. Metabolic rate is directly correlated with oxygen consumption, which determines the respiratory demands and flow rates. The work of breathing is influenced by the air flow resistances of the device and the lung airways. The work (or energy cost) of a breath is related to the pressure gradient created by the breathing muscles and the volume that is moved in and out of the lung during the breath. Anthropometric and biomechanical data are required for appropriate design of various components of a respiratory protective device as well as for the design of relevant test methods.

This technical specification forms Part 2 of a series of documents providing basic anthropometric measurement methods and data on humans. It contains information about the description, definition and diagram of landmarks and dimensions, up-to-date head and face data for various race/ethnic groups, and human test panels.