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МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ

Radiation protection — Clothing for protection against radioactive contamination — Design, selection, testing and use

Protection contre les rayonnements — Vêtements de protection contre la contamination radioactive — Conception, choix, essais et utilisation

Reference number
ISO 8194 : 1987 (E)

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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 8194 was prepared by Technical Committee ISO/TC 85, *Nuclear energy*.

Users should note that all International Standards undergo revision from time to time and that any reference made herein to any other International Standard implies its latest edition, unless otherwise stated.

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Contents

Radiation protection — Clothing for protection against radioactive contamination — Design, selection, testing and use

1 Scope and field of application

This International Standard gives the characteristics of clothing protecting the wearer against radioactive contamination brought about by contact with liquid or solid substances or by atmospheric pollutants, such as solid particles, mist, gases or vapours.

The International Standard applies to two types of clothing: firstly, ventilated-pressurized garments; secondly, unventilated-unpressurized garments.

A test method according to which any new type of garment can be assigned a protection factor that makes it easier for the user to make a choice is described in annex A.

Annexes B and C give methods for measuring leak-tightness and air supply flow rates of ventilated-pressurized garments.

Annex F gives, for guidance purposes only, recommendations for choosing protective clothing.

2 References

ISO 3873, *Industrial safety helmets*.

IEC Publication 651, *Sound level meters*.

3 Definitions

3.1 ventilated-pressurized garments: Protective clothing made from impermeable material which is supplied with breathable air ensuring internal ventilation and overpressure.

These garments provide protection for the respiratory tract and the whole body (head, hands and feet) or only the upper part of the body.

3.2 unventilated-unpressurized garments: Protective clothing made from impermeable or permeable material without an internal ventilation device.

These garments are not intended to provide protection for the respiratory tract but they provide protection for other parts of the body.

3.3 protection factor for clothing: The ratio of the average concentrations of pollutant measured in the ambient atmosphere and inside the helmet of the suit at the point where the wearer draws breath.

The concentrations taken into account are the average concentrations recorded during a standardized test (see A.11.8).

4 Ventilated-pressurized garments

4.1 Classification

4.1.1 General

Ventilated-pressurized clothing is divided into four classes, depending on the way in which the air is released.

Recommendations as to the selection of garment types for different operating conditions are given in annex F.

The four classes are given in 4.1.2 to 4.1.5.

4.1.2 Class I: Ventilated-pressurized clothing with a channelled outlet outside the shield

In class I clothing, the exhaust air is channelled and released at a distance from the ambient atmosphere (e.g. an argon atmosphere) so that the composition of the latter is not affected.

4.1.3 Class II: Ventilated-pressurized clothing with a controlled and channelled outlet

In class II clothing, the exhaust devices (valves, perforations, particulate and gas filters) are fitted with a channel which directs the exhaust air over a specified distance so as to prevent, by ensuring a fast enough exhaust speed, back-diffusion of pollutants.

4.1.4 Class III: Ventilated-pressurized clothing with a controlled outlet

In class III clothing, the air is released through exhaust devices (valves, perforations, particulate and gas filters) into the surrounding atmosphere.

4.1.5 Class IV: Ventilated-pressurized clothing with an uncontrolled outlet

In class IV clothing, the air escapes freely into the surrounding atmosphere (through belt, sleeves, etc.).