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Components for containment enclosures —

Part 5: Penetrations for electrical and fluid circuits

Composants pour enceintes de confinement —

Partie 5: Traversées de parois pour circuits électriques et circuits de fluides

Reference number
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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 document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 85, *Nuclear energy, nuclear technologies, and radiological protection*, Subcommittee SC 2, *Radiological protection*.

This second edition cancels and replaces the first edition (ISO 11933-5:2001), which has been technically revised.

The main changes are as follows:

— editorial and technical changes throughout the document.

A list of all parts in the ISO 11933 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user’s national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

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Introduction

A great number of components or systems used in the electrical and fluid circuits of containment enclosures are presently offered on the market. These components or systems can

— have different geometrical dimensions,

— require holes of different diameters for installation on the containment enclosure wall,

— be attached to the wall by different methods, and

— use different sealing systems for limiting leaktightness.

These components or systems are generally not mutually compatible, but nevertheless often have the same performance level; therefore, it was not possible to select only one component or system as the International Standard.

As a consequence, the aim of this document is to present general principles of design and operation, and to fully describe the most common components or systems in use, in order to

— avoid new, parallel components or systems based on identical principles and differing only in details or geometrical dimensions, and

— make possible interchangeability between existing devices.

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Components for containment enclosures —

Part 5:
Penetrations for electrical and fluid circuits

1 Scope

This document specifies selection criteria for, and describes the design characteristics of, the various electrical- and fluid-circuit penetration components mounted on leaktight or shielded containment enclosures.

This document is applicable to

— electrical components, including connectors, fixed or removable wall penetrations, distribution boxes and lighting devices, and

— fluid components, including fixed or removable wall penetrations, fittings and junctions, and control devices for process or effluent circuits.

NOTE The elements constituting the framework of containment enclosures (e.g. metallic walls, framework and transparent panels) are dealt with in ISO 10648-1.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 10648-1, *Containment enclosures — Part 1: Design principles*

ISO 10648-2, *Containment enclosures — Part 2: Classification according to leak tightness and associated checking methods*

ISO 11933-1, *Components for containment enclosures — Part 1: Glove/bag ports, bungs for glove/bag ports, enclosure rings and interchangeable units*

ISO 11933-2, *Components for containment enclosures — Part 2: Gloves, welded bags, gaiters for remote - handling tongs and for manipulators*

ISO 11933-4, *Components for containment enclosures — Part 4: Ventilation and gas-cleaning systems such as filters, traps, safety and regulation valves, control and protection devices*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 10648-1, ISO 10648-2 and ISO 11933-4, and the following apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

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