



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB 12711-2018

Replacing GB 12711-1991

**Standard of safety for low and intermediate level solid
radioactive waste packages**

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Foreword

In order to implement the Environmental Protection Law of the People's Republic of China, the Law of the People's Republic of China on Prevention and Control of Radioactive Pollution,

The Law of the People's Republic of China protects the environment, protects human health, and regulates the safe management of low- and medium-level radioactive solid

wastes. This standard is formulated.

This standard specifies the basic safety requirements for low- and medium-level radioactive solid waste packages, including low- and medium-level radioactive solid packaging containers.

Basic requirements for the safety of outer packaging (radiation shielding) containers and container containers.

This standard is a revision of the "Safety Standard for Packaging of Low and Medium Level Radioactive Solid Wastes" (GB 12711-1991).

China Institute of Atomic Energy. Compared with the original standard, the main changes are as follows.

- Modifications to the surface dose rate requirements for waste packages of general concern;
- A small number of additions and deletions have been made to the "referenced documents" and "terms and definitions";
- Rewrote the "Basic Requirements for Containments in Waste Packages" and "Basic Requirements for Design and Manufacture of Packaging Containers";
- The provisions of the "Emergency Planning and Preparation" and "Quality Assurance" chapters have been added;
- Added a chapter on "Testing and Testing";
- Added provisions to minimize waste and safety of waste packages.

This standard was first published in 1991 and this is the first revision.

GB 12711-1991 shall be abolished from the date of implementation of this standard.

This standard is formulated by the Radiation Source Safety Supervision Department of the Ministry of Ecology and Environment, the Nuclear Facilities Safety Supervision Department, and the Science and Technology Standards Department.

This standard is mainly drafted by. China Institute of Atomic Energy.

This standard has been implemented since March 1, 2019.

This standard is explained by the Ministry of Ecology and Environment.

Low and medium level radioactive solid waste package safety standards

1 Scope of application

This standard specifies the basic safety requirements for low- and medium-level radioactive solid waste packages, and stores low- and medium-level radioactive solid waste packages.

Disposal and transportation operations have been requested.

This standard is applicable to the preparation of low and medium level radioactive solid waste generated by nuclear facilities and nuclear technology utilization units during operation and decommissioning.

After the waste package.

This standard does not apply to waste packages after radioactive tailings slag and waste radioactive sources have been prepared.

2 Normative references

The following documents are indispensable for the application of this document. For dated references, only the dated version applies to this article.

Pieces. For undated references, the latest edition (including all amendments) applies to this document.

Safety regulations for near-surface disposal of low- and medium-level radioactive solid wastes GB 9132

GB 11806 Safe Transport Procedure for Radioactive Material

GB 11928 Provisional storage regulations for low and medium level radioactive solid waste

GB/T 15219 Quality assurance of transportation and packaging of radioactive materials

GB 18871 Basic standards for ionizing radiation protection and radiation source safety

EJ 914 low and medium level radioactive solid waste concrete container

EJ 1042 low and medium level radioactive solid waste container steel drum

EJ 1076 low and medium level radioactive solid waste container steel box

EJ 1186 Characterization of radioactive waste bodies and waste packages

"Radioactive Waste Classification" Ministry of Environmental Protection Ministry of Industry and Information Technology National Defense Science and Technology Industry Bureau Announcement No. 65 of.2017

3.1 waste package waste package

The sum of the waste body and its packaging container. The waste package delivered for transportation is called a waste package.

3.2 packaging container package container

Containers containing solidified or fixed and other treated radioactive waste.

3.3 Overpack container over-package container

When the surface dose rate of the waste package exceeds the management limit, a packaging container that is attached to the outside of the waste package to reduce the radiation level, or a waste package

A packaging container that is damaged and attached to the outside of the waste bag. Some outer packaging containers are used multiple times; some are disposed together and used only once.

3.4 container container

To facilitate the transportation, handling, storage and disposal operations, a plurality of packaging containers for packaged waste packages are assembled. Most container containers are used

The transportation process is used multiple times; there are also a few that are disposed of together and used only once.

3.5 Effective loading factor efficient loading factor

The volume of waste contained in the waste package as a percentage of the total volume of the waste package.

3.6 Dispersible waste

Non-monolithic, dispersible waste that is prone to pollution and spread, such as incineration ash, evaporation residue, waste ion exchange resin, waste

Carbon powder, etc.

3.7 high integrity container high integrity container

It is expected to contain containers for low- and medium-level radioactive solid waste contained in it for more than 300 years. High finish

Integrity containers can be made of different materials (such as concrete, ductile iron, high density polyethylene or composites).

3.8 load combination load combination

a combination of forces, such as the weight of the container, the gravity load of the contents under normal operating conditions or under test conditions, temperature gradients or

The combination of thermal expansion force, stacking and static load of the maximum load-bearing layer of the covering, and the dynamic load of the force during transportation or hoisting.