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# INTERNATIONAL STANDARD **ISO** 3263



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## **Continuous mechanical handling equipment for loose bulk materials — Bucket elevators — Safety code**

*Engins de manutention continue pour produits en vrac — Élévateurs à godets — Code de sécurité*

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## FOREWORD

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO Member Bodies). The work of developing International Standards is carried out through ISO Technical Committees. Every Member Body interested in a subject for which a Technical Committee has been set up 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.

International Standard ISO 3263 was drawn up by Technical Committee ISO/TC 101, *Continuous mechanical handling equipment*, and circulated to the Member Bodies in September 1973.

It has been approved by the Member Bodies of the following countries :

Australia	Germany	Thailand
Belgium	India	Turkey
Bulgaria	Ireland	United Kingdom
Canada	Japan	U.S.A.
Czechoslovakia	Netherlands	U.S.S.R.
Egypt, Arab Rep. of	Romania	Yugoslavia
Finland	South Africa, Rep. of	
France	Sweden	

No Member Body expressed disapproval of the document.

# Continuous mechanical handling equipment for loose bulk materials – Bucket elevators – Safety code

## 1 SCOPE

This International Standard specifies, in addition to the general safety rules set out in ISO/R 1819, the special safety rules for the following continuous mechanical handling equipment for loose bulk materials: bucket elevators.

## 2 FIELD OF APPLICATION

The safety rules laid down in this International Standard apply regardless of the use for which the equipment is intended.

These safety rules limit the supplier's responsibility to continuous mechanical handling equipment proper, excluding the structures to which such equipment is affixed.

## 3 REFERENCE

ISO/R 1819, *Continuous mechanical handling equipment – Safety code – General rules.*

## 4 SPECIAL SAFETY RULES

The construction and operation of bucket elevators shall meet

- the legal and local requirements relating to safety in general<sup>1)</sup>,
- the principles laid down in clause 1 of ISO/R 1819,
- the general rules laid down in clause 2 of ISO/R 1819,
- the following special rules:

### 4.1 In the construction stage (design and manufacture)

**4.1.1** Cleaning doors shall be provided in the elevator boot in accordance with ISO/R 1819. It is recommended that such doors be constructed or arranged in such a way that the product being handled can be easily extracted after opening them – their release must not be instantaneous and they must comply with ISO/R 1819.

**4.1.2** Whenever materials of a noxious character are to be handled, proper tightness shall be ensured in the

construction of the elevator casing, and where necessary fume and dust extraction equipment shall be provided. Ventilation apertures shall also be provided when fume and dust extraction equipment is to be used.

**4.1.3** As permitted by rule 2.1.4 of ISO/R 1819, a safety device is not compulsory when the normal loading of material on the ascending strand is below 300 daN and the vertical distance between chain-wheel shaft centres does not exceed 5 m.

**4.2 During the installation stage** (design, commissioning and entry into service)

**4.2.1** Bucket elevators shall be fed regularly by suitably designed devices.

**4.2.2** For non-enclosed bucket elevators, the moving parts shall be protected in the areas normally accessible.

For this type of appliance, the areas where materials may normally be expected to fall shall be provided with protective devices and access to such areas shall be forbidden.

**4.2.3** Counterweight tension devices shall be guarded at points normally accessible to personnel. Guards shall prevent access to the space directly below the counterweight; in the absence of these guards, sustaining devices shall be provided.

**4.3 During the utilisation stage** (operating and maintenance)

**4.3.1** It is strongly recommended that special care be taken in the maintenance and cleaning of movable parts (chains, belts, buckets, wheels and pulleys).

The frequency of maintenance and cleaning operations will depend on the nature of the conveyed materials. These operations shall only be undertaken when the elevator is at rest, and after rendering the starting devices inoperative.

**4.3.2** Periodical overhauling and adjustment of the tensioning device will eliminate any possibility of a bucket being wrenched by scraping the bottom of the boot.

1) See Appendix Z of ISO/R 1819.