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Continuous mechanical handling equipment for unit loads — Arm elevators and push bar conveyors — Safety code

Engins de manutention continue pour charges isolées — Élévateurs à bras supports ou à bras poussoirs et entraîneurs par chaîne avec barre d'entraînement — 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 5039 was developed by Technical Committee ISO/TC 101, *Continuous mechanical handling equipment*, and was circulated to the member bodies in February 1976.

It has been approved by the member bodies of the following countries :

Australia	Germany	South Africa, Rep. of
Austria	India	Spain
Belgium	Japan	Sweden
Bulgaria	Mexico	Turkey
Czechoslovakia	Netherlands	United Kingdom
Finland	Poland	U.S.S.R.
France	Romania	Yugoslavia

No member body expressed disapproval of the document.

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Continuous mechanical handling equipment for unit loads — Arm elevators and push bar conveyors — Safety code

1 SCOPE

This International Standard specifies, in addition to the general safety rules set out in ISO 1819, the special safety rules for the following continuous mechanical handling equipment for unit loads : arm elevators and push bar conveyors.[1)]

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 properly so called, excluding the structures to which such equipment is fixed.

3 REFERENCES

ISO 1819, *Continuous mechanical handling equipment — Safety code — General rules.*[2)]

ISO 2148, *Continuous handling equipment — Nomenclature.*

4 SPECIAL SAFETY RULES

The design, construction and operation of arm elevators and push bar conveyors for unit loads shall meet

- the legal and local requirements relating to safety in general (see appendix Z of ISO 1819);
- the principles laid down in clause 1 of ISO 1819;
- the general rules laid down in clause 2 of ISO 1819;
- the following special rules.

4.1 In the construction stage (design and manufacture)

4.1.1 The traction mechanism drive shall be equipped with a load limiter (with or without motor cut-out) which responds when the permissible traction force is exceeded, i.e. independently of the overload safety devices of the electrical switchgear.

4.1.2 In addition to rule 2.1.3 of ISO 1819, the arms and push bars shall be so designed as to prevent any accidental slipping of the transported material.

4.1.3 In addition to rule 2.1.6 of ISO 1819, it is recommended that the loading operations be carried out by means of a mechanical device (which may be a servo-mechanism) when the speed of the loads exceeds 0,50 m/s or when the mass of the load exceeds 50 kg. Unloading must always be carried out without manual assistance.

4.1.4 In addition to rule 2.1.7 of ISO 1819, the chain tracks shall be guarded in areas which are normally accessible to personnel.

4.1.5 In addition to rule 2.1.7 of ISO 1819, where moving parts give rise to trapping points dangerous to personnel, adequate protection shall be provided.

4.2 During the installation stage (layout, erection and entry into service)

4.2.1 The appliances shall be erected and aligned with care. This applies not only to the framework but also to the mechanical parts and the chains.

4.2.2 The area underneath the return strand of the conveyor shall be provided with a guard or with fencing preventing access, unless it is normally inaccessible to personnel or if there is no possibility of trapping.

4.3 During the utilization stage (operation and maintenance)

4.3.1 Clear operating instructions concerning the loading of the appliances shall be prominently displayed adjacent to the loading positions. These shall include the permissible unit load, its positioning and its limiting dimensions.

4.3.2 Manual interference with the load shall be prohibited when the speed of the loads exceeds 0,50 m/s or when their mass exceeds 50 kg.

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1) See 2.21.11 and 2.21.12 of ISO 2148.

2) At present at the stage of draft. (Revision of ISO/R 1819-1970.)