INTERNATIONAL STANDARD 1821

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

Continuous mechanical handling equipment for loose bulk materials — Belt feeders and conveyors — Safety code

Engins de manutention continue pour produits en vrac — Distributeurs et transporteurs à courroie — Code de sécurité

First edition — 1975-10-15

UDC 621.867.2-78

Ref. No. ISO 1821-1975 (E)

Descriptors : handling equipment, continuous handling, bulk products, conveyors, belt conveyors, safety requirements.

Price based on 2 pages

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.

Prior to 1972, the results of the work of the Technical Committees were published as ISO Recommendations; these documents are now in the process of being transformed into International Standards. As part of this process, Technical Committee ISO/TC 101 has reviewed ISO Recommendation R 1821 and found it technically suitable for transformation. International Standard ISO 1821 therefore replaces ISO Recommendation R 1821-1970 to which it is technically identical.

ISO Recommendation R 1821 was approved by the Member Bodies of the following countries :

Austria	Greece	Poland
Belgium	Israel	South Africa, Rep. of
Canada	Italy	Sweden
Czechoslovakia	Japan	United Kingdom
Egypt, Arab Rep. of	New Zealand	U.S.S.R.
Finland	Norway	
France	Peru	

The Member Body of the following country expressed disapproval of the Recommendation on technical grounds :

Germany

No Member Body disapproved the transformation of ISO/R 1821 into an International Standard.

Printed in Switzerland

Continuous mechanical handling equipment for loose bulk materials — Belt feeders and conveyors — 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 : belt feeders and conveyors.

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 suppliers' 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 belt feeders and conveyors shall meet

- the legal and local requirements relating to safety in general[1].
- 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 Belt feeders and conveyors

4.1.1 *In the construction stage* (design and manufacture)

4.1.1.1 Belts shall be of sufficient width to suit the specific load and material to be conveyed. Guiding and centring devices shall be provided, if necessary, at the feed points.

4.1.1.2 In conformity with rule 2.1.7 of ISO/R 1819, belt idlers and pulleys shall be completely guarded at the in-running nips and pinch points (feed, tension, convex curve points, etc.), where such points are normally accessible to operating personnel and any other persons who work in the vicinity of the machinery.

4.1.1.3 In addition to rules 2.1.2 and 2.1.3 of ISO/R 1819 relating to inclined conveyors, a safety device shall be provided (longitudinal rods, grill with articulated bars, etc.), if it is normally foreseeable that material could be thrown out (throwing out caused, for instance, by a stop under load or irregular loading).

4.1.1.4 As permitted by rule 2.1.4 of ISO/R 1819, concerning the prevention of over-running or running backwards, a safety device is not compulsory where the normal loading of material on the incline is below 500 kg.

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

4.1.2.1 Belt conveyors shall be erected and aligned with care. This applies not only to the framework, but also to the mechanical parts and the belt.

4.1.2.2 Belt conveyors shall be fed evenly, preferably by feeder or, failing this, by a carefully designed feed chute.

4.1.2.3 The openings of feeding or transfer hoppers and chutes shall be guarded if normally accessible to operating personnel. It is recommended that inspection doors be provided on large hoppers and chutes.

4.1.2.4 In pursuance of the requirements laid down in rule 2.2.11 of ISO/R 1819, suitable protection shall also be provided against accidental dropping of material adhering to the return belt.

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

1) See appendix Z of ISO/R 1819.

4.1.3 *During the utilisation stage* (operation and maintenance)

4.1.3.1 In addition to rule 2.3.4 of ISO/R 1819, the adjustment and maintenance in good running order of the belt and pulley cleaning devices shall be carried out regularly.

4.1.3.2 In addition to rule 2.3.5 of ISO/R 1819, the manual cleaning of pulleys, idlers and other parts, necessitated by the build-up of material or any other cause, shall only be undertaken when the equipment is at rest, and after rendering the starting devices inoperative.

4.1.3.3 In compliance with rule 2.3.2 of ISO/R 1819, the user shall be particularly careful to ensure a regular feed, avoiding, even momentarily, the overloading of the appliance.

In particular, the user shall not change the feeding points without previously consulting the constructor.

4.2 Special equipment (Additional rules)

The majority of rules drafted for belt conveyors apply to this special equipment.

4.2.1 *In the construction stage* (design and manufacture)

4.2.1.1 Additional travelling equipment such as a travelling tripper, scraper, travelling feed hopper, feeder, etc., whether self-propelled or manually controlled, shall be fitted with a device capable of immobilising it.

4.2.1.2 Wheels or rollers of mobile conveyors (shuttle conveyors) and of additional travelling equipment referred to under rule 4.2.1.1 shall be guarded at working points accessible to service personnel under normal working conditions.

4.2.1.3 It is recommended to reduce, as far as possible, projecting parts of mobile conveyors (shuttle conveyors) and additional travelling equipment (travelling tripper, scraper, travelling feed hopper, feeder, etc).

4.2.1.4 Whenever an operator must remain on the travelling equipment, a platform shall be provided and so designed as to prohibit any accidental contact with mobile components or any part of the fixed installation.

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

4.2.2.1 Safety devices shall be provided to limit the travel of additional travelling appliances and equipment.

4.2.2.2 Where the speed of a mobile appliance or equipment travelling alongside a traffic gangway is designed to exceed 0,10 m/s, an audible or visible warning device shall be operated prior to (and, where applicable, during) movement.