UDC 621.867.2 – 78

Ref. No. : ISO/R 1821-1970 (E)

ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

ISO RECOMMENDATION
R 1821

CONTINUOUS MECHANICAL HANDLING EQUIPMENT FOR LOOSE BULK MATERIALS

BELT FEEDERS AND CONVEYORS

SAFETY CODE

1st EDITION

October 1970

For each individual country the only valid standard is the national standard of that country.

Printed in Switzerland

Also issued in French and Russian. Copies to be obtained through the national standards organizations.

BRIEF HISTORY

The ISO Recommendation R 1821, *Continuous mechanical handling equipment for loose bulk materials – Belt feeders and conveyors – Safety code*, was drawn up by Technical Committee ISO/TC 101, *Continuous mechanical handling equipment*, the Secretariat of which is held by the Association Française de Normalisation (AFNOR).

Work on this question led to the adoption of Draft ISO Recommendation No. 1821, which was circulated to all the ISO Member Bodies for enquiry in April 1969. It was approved, subject to a few modifications of an editorial nature, by the following Member Bodies :

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

The following Member Body opposed the approval of the Draft :

Germany

This Draft ISO Recommendation was then submitted by correspondence to the ISO Council, which decided to accept it as an ISO RECOMMENDATION.

ISO Recommendation | R 1821 | October 1970

CONTINUOUS MECHANICAL HANDLING EQUIPMENT FOR LOOSE BULK MATERIALS

BELT FEEDERS AND CONVEYORS

SAFETY CODE

1. SCOPE

This ISO Recommendation specifies, in addition to the general safety rules set out in ISO Recommendation R 1819, *Continuous mechanical handling equipment – Safety code – General rules*, 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 ISO Recommendation 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. SPECIAL SAFETY RULES

The construction and operation of belt feeders and conveyors should meet

- the legal and local requirements relating to safety in general*;
- the principles laid down in section 1 of ISO Recommendation R 1819;
- the general rules laid down in section 2 of ISO Recommendation R 1819;
- the following special rules :

3.1 Belt feeders and conveyors

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

3.1.1.1 Belts should be of sufficient width to suit the specific load and material to be conveyed. Guiding and centering devices should be provided, if necessary, at the feed points.

3.1.1.2 In conformity with rule 2.1.7 of ISO Recommendation R 1819, belt idlers and pulleys should 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.

* See Appendix Z of ISO Recommendation R 1819.

3.1.1.3 In addition to rules 2.1.2 and 2.1.3 of ISO Recommendation R 1819 relating to inclined conveyors, a safety device should 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).

3.1.1.4 As permitted by rule 2.1.4 of ISO Recommendation R 1819, a safety device is not compulsory where the normal loading of material on the incline is below 500 kg.

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

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

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

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

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

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

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

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

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

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

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

3.2 **Special equipment** (Additional rules)

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

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

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