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Continuous mechanical handling equipment — Safety code for screw conveyors — Examples of guards for trapping and shearing points

Engins de manutention continue — Code de sécurité des transporteurs à vis — Exemples de protection des points de coincement et de cisaillement

ANSI Internat Doc Sect

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ISO/TR 9172 was prepared by Technical Committee ISO/TC 101, *Continuous mechanical handling equipment*.

The reasons which led to the decision to publish this document in the form of a technical report type 3 are explained in the Introduction.

0 Introduction

This Technical Report supplements the various safety standards for conveyors for loose bulk materials. It gives examples of the many kinds of hazards connected with screw conveyors at trapping and shearing points; it incorporates illustrative examples which show in principle how sufficient safety can be achieved, without excluding other methods which give the same level of safety.

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1 Scope and field of application

This Technical Report gives examples of the kinds of hazards associated with screw conveyors at danger points, in particular trapping and shearing points located between the moving screw and the fixed parts of the conveyor or surrounding structures.

It describes different safety devices, illustrated by examples of design sheets, capable of meeting safety requirements specified in ISO 1819 and ISO 7149.

2 References

ISO 1819, *Continuous mechanical handling equipment — Safety code — General rules.*

ISO 7149, *Continuous mechanical handling equipment — Safety code — Special rules.*

3 Danger points

3.1 Trapping points

Trapping points occur where the outer edge of the screw approaches a fixed part with a steadily decreasing distance; examples of danger points where this hazard occurs are given in 3.1.1 to 3.1.5.

3.1.1 Between screw and trough

As the distance between the outer edge of the screw blade and the trough decreases down to the operating clearance, there is a danger of limbs being pulled in (see figure 1). In the case of large screw conveyors, the whole body may be pulled in.

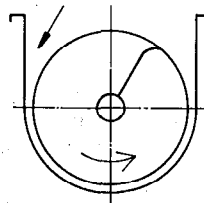


Figure 1

3.1.2 Between screw and screw protection plate

A trapping point will occur on the running area under the protection plate (usually made from angle steel or shaped like a roof) if the clearance c (see figure 2) is less than 50 mm.

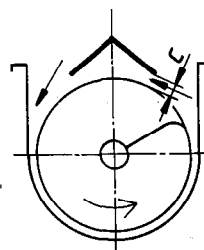


Figure 2