
International Standard



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Mobile continuous bulk handling equipment — Part 1 : Rules for the design of structures

Appareils mobiles de manutention continue pour produits en vrac — Partie 1 : Règles pour le calcul des charpentes

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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.

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

Austria	France	South Africa, Rep. of
Belgium	Germany, F. R.	Spain
Chile	India	Sweden
Czechoslovakia	Mexico	Turkey
Finland	Netherlands	USSR

The member bodies of the following countries expressed disapproval of the document on technical grounds :

Australia
Denmark
United Kingdom

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Mobile continuous bulk handling equipment — Part 1 : Rules for the design of structures

1 Scope

This International Standard lays down rules for determining the loads, kinds and combinations of loads (main, additional and special loads) which must be taken into account when designing metallic structures for mobile continuous bulk handling equipment.

2 Field of application

This International Standard is applicable to mobile continuous handling equipment for bulk products : among others, stackers and reclaimers by bucket wheels and their conveyors, bucket wheel and bucket excavators for open-cast working, ship loaders and unloaders.

The annex provides further details on methods of applying the rules.

ISO 5049/2 will deal with rules for the design of mechanisms.

3 Reference

ISO 2148, *Continuous handling equipment — Nomenclature*.

4 Loads

Depending on their frequency, the loads are divided into three different load groups : main loads, additional loads and special loads.

a) The main loads comprise all the permanent loads which occur when the equipment is used under normal operating conditions.

They include, among others :

- dead loads;
- useful loads;
- incrustation;
- normal digging and lateral resistances;

- forces at the conveying elements for the useful load;
- permanent dynamic effects;
- inclination of the machine;
- loads on the gangways, stairs and platforms.

b) The additional loads are loads that can occur intermittently during operation of the equipment or when the equipment is not working; these loads can either replace certain main loads or be added to the main loads.

They include, among others :

- wind load for machines in operation;
- snow load;
- temperature load;
- abnormal digging and lateral resistance;
- resistances due to friction and travel;
- horizontal lateral forces during travelling;
- non-permanent dynamic effects.

c) The special loads comprise the loads which should not occur during and outside the operation of the equipment but the occurrence of which is not to be excluded.

They include, among others :

- clogging of chutes;
- resting of the bucket wheel or the bucket ladder;
- locking of travelling devices;
- lateral collision of the bucket wheel with the slope;
- wind load for machines not in operation;
- buffer effects;
- loads due to earthquakes.