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Continuous mechanical handling equipment — Overhead electrical monorail conveyors — Definitions and safety rules

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established 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. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 9851 was prepared by Technical Committee ISO/TC 101, *Continuous mechanical handling*. It is based on the work carried out by "Section II - Continuous handling" of the European Mechanical Handling Confederation (FEM).

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Continuous mechanical handling equipment — Overhead electric monorail conveyors — Definitions and safety rules

1 Scope

This International Standard defines basic terms and specifies safety rules for overhead electrical monorails for materials handling, including the tracks, supporting structure, lifting and lowering devices, the trolleys and the load-supporting devices.

It does not apply to systems driven by hand or by gravity, or to systems for conveying people, or to overhead conveyors.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 1819 : 1977, *Continuous mechanical handling equipment — Safety code — General rules.*

ISO 6385 : 1981, *Ergonomic principles of the design of work systems.*

IEC 144 : 1963, *Degrees of protection of enclosures for low-voltage switchgear and controlgear.*

IEC 364 : 1970 to 1988, *Electrical installations of buildings.*

3 Definitions

3.1 Definitions relating to monorail conveyors

3.1.1 overhead electric monorail conveyor: Track transport system with individually suspended driver trolleys (3.1.2.1), equipped with load-supporting devices (3.1.2.2) and/or a coupling device to move idler trolleys or floor carriages on the same or a different track (3.1.3). (See figure 1.)

3.1.2 mobile unit: The trolley (3.1.2.1) and the load-supporting device (3.1.2.2) with or without a load. (See figure 1.)

3.1.2.1 trolley: A wheeled mobile assembly running on a track (3.1.3), which may consist of a driver trolley and an idler trolley, or just a driver trolley or a combination of driver trolleys and idler trolleys, connected by one or more load bars. (See figure 1.)

3.1.2.2 load-supporting device: The connection between the load bar and the load, which may be composed of only a sling and a load-carrying device.

3.1.3 track: Horizontal, vertical or inclined carrying and guiding rail, including switches and turntables.

3.1.4 lifting and lowering device (drop sections): Transfer device which transfers the trolley (3.1.2.1) from one level to another by vertical or inclined movement of a track element.

3.1.5 support structure: Suspension or support of the track (3.1.3).

3.2 Definitions relating to work zones and places

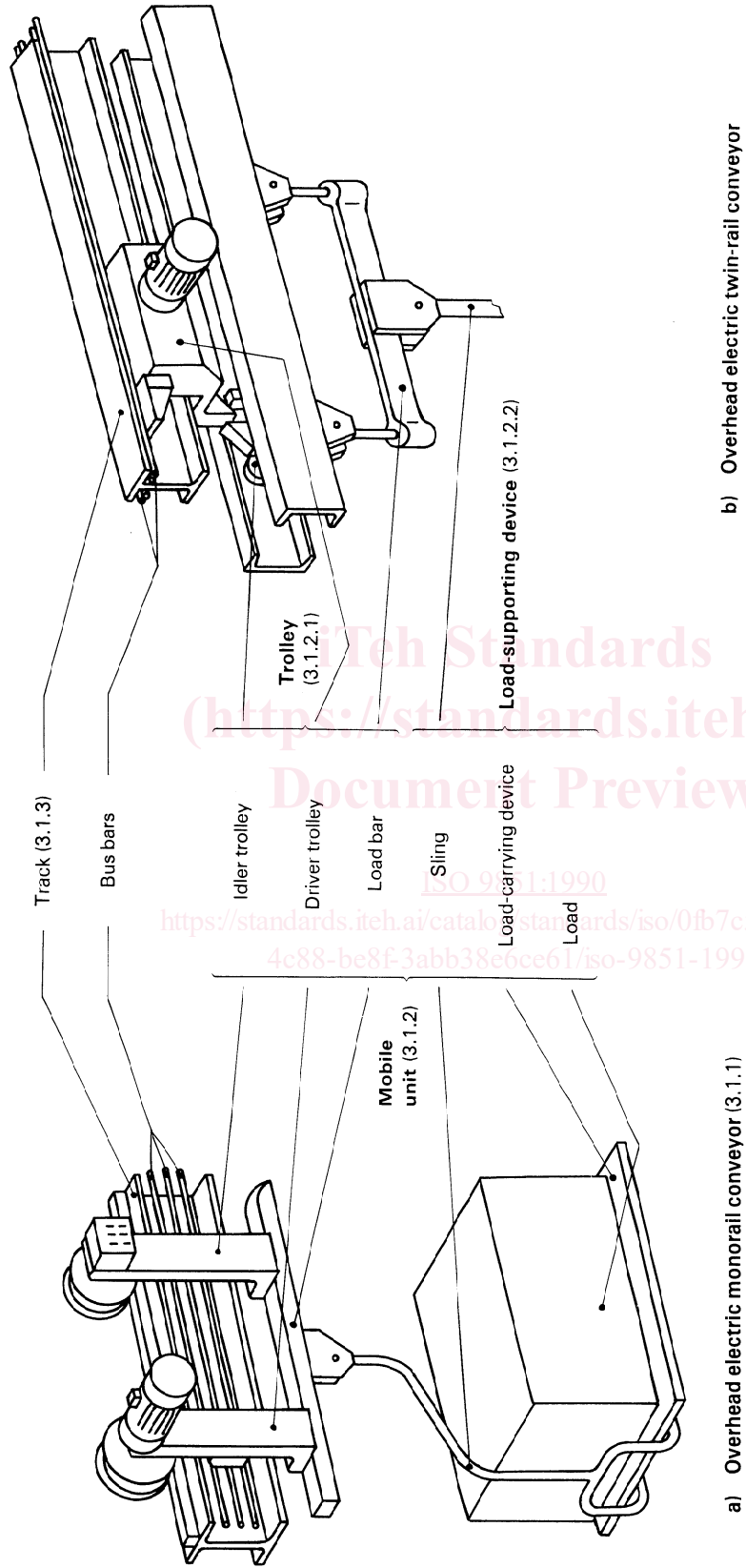
3.2.1 travelling zone: The volume of space swept by the mobile units (3.1.2) and their load.

3.2.2 permanent work place: Zone in which personnel stay for the purpose of their work. It might also include, for example, fixed gangways, landings or platforms.

3.2.3 passageway for persons: Zone used for the movement of persons.

NOTE — Passageways and work places may be used for both purposes. The access to a permanent work place is also a passageway.

3.2.4 occasional access zone: Accessible restricted zone used exclusively by authorized personnel.



a) Overhead electric monorail conveyor (3.1.1)

b) Overhead electric twin-rail conveyor

NOTE — The numbers shown in brackets refer to the corresponding definitions in clause 3.

Figure 1 — Examples of overhead electrical twin- and monorail conveyors