

Specification for

Portable and mobile troughed belt conveyors

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Foreword

This revision of this British Standard has been prepared under the direction of the Mechanical Handling Standards Committee. It supersedes BS 4531:1969 which is withdrawn. It applies to portable and mobile troughed belt conveyors, and is a companion standard to BS 2890.

This revision specifies more detailed requirements for pulley and idler lengths than the earlier edition. The relationship between specified dimensions and those in the relevant ISO standard are also now given in this standard. For safety precautions only handrails have been included in this revised standard. Safety requirements and statutory requirements will be the subject of a future code of practice.

The attention of users of this standard is drawn to the need to comply with all the statutory instruments and regulations appropriate to the equipment, its siting and use, covered by this standard.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

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Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 10, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

1 Scope

This British Standard specifies requirements for portable and mobile troughed belt conveyors, in particular for their belting, pulleys and power units, together with requirements for ancillary items. Requirements for belting only apply to belts with a smooth or patterned surface.

NOTE 1 Equations for calculating the belt carrying capacity are given in Appendix A.

NOTE 2 The titles of the publications referred to in this standard are listed on the inside back cover.

2 Definitions

For the purposes of this British Standard the following definitions apply.

2.1

portable conveyor

a conveyor designed to be lifted and moved as a unit from one position to another

NOTE A typical portable troughed belt conveyor is shown in Figure 1.

2.2

mobile conveyor

a conveyor on wheels, crawlers, skids or pontoons

NOTE Typical troughed belt mobile conveyors are shown in Figure 2 and Figure 3.

2.3

head of the conveyor

the discharge end of the conveyor

2.4

tail of the conveyor

the loading end of the conveyor

2.5

carrying idler

an idler which supports the loaded belt. An assembly of one or more carrying idlers comprises a carrying idler set

2.6

impact idler

an idler which supports the loaded belt at the feed point of the conveyor and is usually covered with rubber to absorb the impact of the material being fed

2.7

return idler

an idler which supports the empty side of the belt. An assembly of one or more return idlers comprises a return idler set

2.8

take-up device

the device for taking up slack and applying tension to the belt

2.9

anti-run-back device

an automatic device for preventing a loaded elevating conveyor belting running backwards

2.10

driving pulley

the pulley which drives the belt

2.11

snub pulley

the pulley used to develop the necessary arc of contact (angle of wrap) of the belt on the driving pulley

2.12

bend pulley

the pulley used to change the direction of the belt

2.13

head pulley

the terminal pulley at the head of the conveyor

2.14

tail pulley

the terminal pulley at the tail of the conveyor

2.15

take-up pulley

the travelling pulley used in the take-up device

2.16

drive

the equipment which drives the belt consists of a power unit, transmission and driving pulley

2.17

power unit

the conveyor power source, e.g. an electric motor, internal combustion engine, motorized pulley etc.

2.18

transmission

the assembly of devices coupling the power unit to the driving pulley for driving the belt at the desired speed

2.19

handing of conveyor

the designation of the sides of a unidirectional conveyor, e.g. left or right, when viewed from the tail to the head of the conveyor

2.20

brake

a device for bringing the belting of the conveyor to rest and maintaining it at rest