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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 34629-2017

**Conveyor belts -- Determination of minimum pulley diameters
(English Translation)**

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Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009.

This standard is modified, using the redrafting method, in relation to ISO 3684.1990

Conveyor belts - Determination of minimum pulley diameters (English version).

This standard differs technically from ISO 3684.1990. These different clauses are indicated by a vertical single line (|) in the margin. The technical differences and their reasons are as follows.

-- Regarding normative references, this standard has made adjustments with technical differences to adapt to Chinese technical conditions. These adjustments are mainly reflected in Chapter 2, "Normative references," and are as follows.

lambda ISO 3.1973 has been replaced by GB/T 321, which is identical to the international standard (see Chapter 2 and Chapter 4);

lambda ISO 7590.1988 has been replaced by GB/T 5753, which is identical to the international standard (see Chapter 2 and 3.1.2);

lambda ISO 583.1975 has been replaced by GB/T 32331, which is identical to the international standard (see Chapter 2 and 3.1.1);

lambda ISO 21183-1 has been replaced by HG/T 4601.1, which is identical to the international standard (see Chapter 1);

lambda The year designation for ISO 1536.1975 has been removed (see Chapter 2).

-- The title of Chapter 3 has been revised, and introductory paragraphs for terms and definitions have been added (see Chapter 3).

-- The letters representing the thickness of the fabric carcass and the thickness of the steel cord carcass have been modified (see 3.1).

The following editorial changes have also been made to this standard.

-- The international standard amendment (ISO 3684.1990/Amd.1.2006) has been incorporated into this standard, and the revised clauses have been marked with a vertical double line (||) in the margin.

-- Note 3 in Chapter 1 has been deleted.

-- The term "Belts" in the ISO 1536 standard title has been corrected to "Belt pulleys".

Conveyor belts - Determination of minimum pulley
diameters

1 Scope

This standard specifies the method for calculating the minimum pulley diameter of a conveyor belt.

This standard applies to rubber or plastic conveyor belts with fabric or metal carcasses.

These belts have carcasses of varying thicknesses and materials and are used under any expected tension, but not exceeding the recommended maximum belt tension (RMBT).

This standard does not apply to light conveyor belts specified in HG/T 4601.1.

This standard does not apply to conveyor belts with a belt carcass thickness exceeding

20 mm or conveyor belts with a rubber or plastic interlayer thickness exceeding 0.8 mm,

between fabric layers.

This standard also does not apply to heat-resistant conveyor belts that transport products with temperatures exceeding 100 °C or to conveyor belts with ambient temperatures below -40 °C.

When the pulley diameter is too small relative to the belt carcass structure, it will lead to premature damage to the conveyor belt.

NOTE 1: The values given in this standard are the minimum values used when corresponding values are

unavailable from conveyor belt manufacturers.

NOTE 2: The method for calculating the minimum pulley diameter given in this standard applies to all

general applications. In special applications, conveyor belt manufacturers may permit the use of pulleys

with diameters smaller than the minimum diameter determined according to this standard.

2 Normative references

The following documents are essential for the application of this document. For any dated reference, only the version corresponding to that date applies to this document; for any undated reference, the latest version (including all amendments) applies to this document.

GB/T 321 Preferred numbers - Series of preferred numbers (GB/T 321-2005, ISO 3.1973, IDT)

GB/T 5753 Steel cord conveyor belts - Methods for the determination of total thickness and cover thickness (GB/T 5753-2013, ISO 7590.2009, IDT)

GB/T 32331 Conveyor belts with a textile carcass - Total belt thickness and thickness of constitutive elements - Test methods (GB/T 32331-2015, ISO 583.2007, IDT)

HG/T 4601.1 Light conveyor belts - Part 1. Principal characteristics and applications (HG/T 4601.1-2014, ISO 21183-1.2005, IDT)

ISO 1536 Continuous mechanical handling equipment for loose bulk materials - Troughed belt conveyors (other than portable conveyors) - Belt pulleys

3 Terms and definitions

The following terms and definitions apply to this document.

3.1 belt structure

It consists of a cover layer and a belt carcass layer.

3.1.1 thickness of fabric carcass

d2

See GB/T 32331.

3.1.2 thickness of steel cord carcass

S8

See GB/T 5753.

3.2 types of pulley

Figure 1 and Figure 4 show the different types of pulleys used for conveyor belts.

Type A. Driving pulleys and pulleys exposed to high tension, for example.

- the main driving pulley at the head or tail;
- discharge pulleys under full tension;
- loop pulleys in unloading machines;
- the head pulley when the driving is at the tail, etc.

Type B. Braking pulleys in the return run under low tension, for example.

- the tail pulley when the driving is at the head;
- the head pulley when the conveying is downward and a braking device is mounted on the tail pulley;
- the braking pulleys and steering pulleys in tensioning devices.

Type C. Steering pulley, which causes a change in belt direction of less than 30°.

3.3 pulley diameter

The total diameter of the pulley, without considering the thickness of the protective layer made of rubber, ceramic or similar materials that may be worn during use.

For crowned pulleys, the minimum diameter shall not be less than the specified minimum value.