



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

GB/T 28267.1-2021

**Steel cord conveyor belts - Part 1: Design, dimensions and
mechanical requirements for conveyor belts for general use**

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1 Scope

This part of GB/T 28267 specifies the performance and structural requirements of conveyor belts with longitudinal steel ropes as reinforcements. Chapter 6 Provisions The structural requirements are applicable to the design of a single belt and the design of all model series in GB/T 28267.2.

This section applies to steel cord conveyor belts.

2 Normative references

The following documents are indispensable for the application of this document. For dated reference documents, only the dated version applies to this article Pieces. For undated reference documents, the latest version (including all amendments) is applicable to this document.

GB/T 528 Determination of tensile stress and strain properties of vulcanized rubber or thermoplastic rubber (GB/T 528-2009, ISO 37.2005, IDT)

GB/T 3512 Hot air accelerated aging and heat resistance test of vulcanized rubber or thermoplastic rubber (GB/T 3512-2014, ISO 188.

2011, IDT)

GB/T 3684 Conveyor belt conductivity specification and test method (GB/T 3684-2021, ISO 284.2012, MOD)

GB/T 3685 Laboratory-scale test method for combustion characteristics of conveyor belts (GB/T 3685-2017, ISO 340.2013, MOD)

GB/T 5753 Steel cord conveyor belt total thickness and covering layer thickness determination method (GB/T 5753-2013, ISO 7590.

2009, IDT)

GB/T 5754.2 Steel cord conveyor belt longitudinal tensile test Part 2.Determination of tensile strength (GB/T 5754.2-2017, ISO 7622-2.2015, IDT)

GB/T 5755 Steel wire core conveyor belt rope and coating glue adhesion test under the original state and after heat aging test (GB/T 5755-2021, ISO 7623.2015, IDT)

GB/T 7983 Conveyor belt transverse flexibility (grooving) test method (GB/T 7983-2013, ISO 703.2007, MOD)

GB/T 9867 Determination of abrasion resistance of vulcanized rubber or thermoplastic rubber (rotating roller abrasion machine method) (GB/T 9867-2008, ISO 4649.2002, IDT)

GB/T 17044 Steel wire rope core conveyor belt cover layer and belt core layer adhesion strength test (GB/T 17044-2020,

GB/T 8094.2013, IDT)

GB/T 28267.2 Steel cord conveyor belt Part 2.Preferred belt type (GB/T 28267.2-2015, ISO 15236-2.

2004, MOD)

GB/T 33514 Determination of the transverse and vertical displacement of the steel wire rope of the steel wire rope core conveyor belt

GB/T 33525 conveyor belt cover performance category (GB/T 33525-2017, ISO 10247..1990, MOD)

GB/T 39795 General Purpose Conveyor Belt Conductivity and Flammability Safety Requirements

3 Terms and definitions

The following terms and definitions apply to this document.

3.1 Edgewidth b_k The width of the adhesive layer between the outer wire rope and the belt edge.

see picture 1.

3.2 Buffer layer breaker A type of transverse reinforcement in the conveyor belt, generally composed of fabric, buried in the upper cover layer and (or) lower cover layer, the distance from the longitudinal rope to 1mm less, as part of the covering layer.

See Figure 2.

Note. Rewrite GB/T 5753-2008, definition 2.1.

3.3 Cross piece weft A type of transverse reinforcement in the conveyor belt, generally

composed of steel wires, buried above and (or) below the longitudinal steel wire ropes.

The 1mm area is used as a part of the belt core.

See Figure 3.

Note. Rewrite GB/T 5753-2008, definition 2.2.

4 Symbols and units

The symbols and units listed in Table 1 apply to this document.

Table 1 Symbols and units

6.2 Band width The width and limit deviation of the belt are shown in Table 3. They refer to the width of the belt at the time of manufacture, not the width of the belt under tension after installation.

6.3 The width of the tape edge and the reinforced width of the tape

6.3.1 Edge rubber width The width (b_k) of the tape edge should not be less than 15mm and not more than 40mm. The approximate value is calculated by the following formula.

$$b_k \sim 5 \times S_6$$

6.3.2 Reinforced width of belt The enhanced width (b_t) of the belt is calculated as follows.

$$b_t = B - 2b_k - d \quad (\text{See 7.2.2})$$

6.4 Number of steel wire ropes The minimum breaking force (F_{bs}) of the wire rope (see 7.1), the minimum breaking strength of the belt (KN) and the belt width (B) can be used to obtain the belt The minimum number of wire ropes.

6.6 Cover thickness The minimum thickness (S_2 or S_3) of the upper and lower covering layers of the standard belt (see 5.1) should not be less than $0.7d$. When $0.7d \leq 4\text{mm}$, the upper and lower covering The minimum thickness of the cover layer should not be less than 4mm.

Belts with transverse reinforcement (see 5.2). The minimum cover thickness of the belt with a buffer layer can be greater than the specified value (depending on the buffer layer Design); the minimum covering layer of the belt with transverse members can be less than the specified value.

The actual cover layer thickness should be determined according to the performance type of the cover layer and the conveying working conditions.

6.7 Tape thickness The belt thickness (S_1) is the sum of the belt core layer thickness (S_6) and the cover layer thickness (S_2 and S_3).

When the tape thickness is measured according to GB/T 5753, its maximum value ($S_{1\max}$)

should be equal to $1.1S_1$, and its minimum value (S_{1min}) is specified as follows.

When $S_1 \leq 20\text{mm}$, $S_{1min} = (S_1 - 1)\text{mm}$;

When $S_1 > 20\text{mm}$, $S_{1min} = (S_1 - 1.5)\text{mm}$.

The two surfaces of the belt should be flat and parallel, and the difference between the thickness of the belt at any two points (for example, along the bandwidth) shall not exceed $0.05S_1$.

6.8 Belt length The length limit deviation of the conveyor belt provided by the manufacturer to the user is shown in Table 4.

The length of the order provided by the user should include the length required for the production of the belt joint and the external test.

7 Mechanical performance requirements

7.1 Wire rope breaking force The wire rope breaking force shall be based on the test report of the wire rope manufacturer. If the user requests to take out the steel wire rope from the conveyor belt as a test The sample is tested, and the test should be carried out in accordance with GB/T 5754.2.

The wire rope breaking force (F_{bs}) should be at least equal to the value obtained by the following calculation. multiply the minimum breaking strength of the belt (KN) by the bandwidth (B), and then Divide by the number of wire ropes (n), namely.

7.2 The position of the wire rope in the belt

7.2.1 General The position of the wire rope in the belt is determined according to GB/T 33514.

7.2.2 Lateral position The wire rope should stretch in a straight line in the belt. When measured in accordance with GB/T 33514, the value of the wire rope spacing deviation from the nominal spacing is greater than The number of steel wire ropes of $\pm 1.5\text{mm}$ shall not be greater than 5% of the total number of steel wire ropes.

The deviation between the actual value of the belt reinforcement width (bt) and the calculated value $[(n-1)xt]$ should not be more than 1%.

Example 2. A steel cord conveyor belt (ST), length 900m, width 1400mm, minimum tensile strength 2500N/mm, upper cover layer thickness 10mm, lower cover The thickness of the cover layer is 6mm, and the rubber performance type code of the cover layer is D. Both the upper and lower cover layers contain a transverse reinforcement (buffer layer) composed of fabric materials.

The marks are as follows.

900m steel cord conveyor belt, GB/T 28267.1-1400ST2500/10T 6TD A2 **Example 3.** A steel