
**Conveyor belts — Specification for
rubber- or plastics-covered conveyor belts
of textile construction for general use**

*Courroies transporteuses — Spécification pour courroies
transporteuses recouvertes de caoutchouc ou de plastique à structure
textile, d'usage général*

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[ISO 14890:2013](https://standards.iteh.ai/catalog/standards/sist/0473f50b-d9c5-4403-bca7-0790a5b149c8/iso-14890-2013)

<https://standards.iteh.ai/catalog/standards/sist/0473f50b-d9c5-4403-bca7-0790a5b149c8/iso-14890-2013>



iTeh STANDARD PREVIEW (standards.iteh.ai)

[ISO 14890:2013](#)

<https://standards.iteh.ai/catalog/standards/sist/0473f50b-d9c5-4403-bca7-0790a5b149c8/iso-14890-2013>



COPYRIGHT PROTECTED DOCUMENT

© ISO 2013

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

Contents

Page

Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Designation	2
4.1 Belting designation	2
4.2 Examples for ordering	3
5 Construction	4
6 Length	5
7 Width	5
8 Rubber cover	6
9 Tolerances on total belt thickness and cover thickness	7
9.1 Tolerance on total belt thickness	7
9.2 Tolerance on cover thickness	7
10 Transverse fabric joints in multi-ply belting	7
10.1 General	7
10.2 Outer plies	7
10.3 Inner plies	8
10.4 Adjacent plies and non-adjacent plies	8
10.5 Joints in the same ply	8
10.6 Mono-ply, duo-ply and solid woven belting	8
11 Longitudinal fabric joints in multi-ply belting and duo-ply belting	8
11.1 Spacing of joints	8
11.2 Number of joints	8
12 Longitudinal fabric or carcass joints in solid woven and mono-ply belting	8
13 Elongation	8
14 Full thickness tensile strength	8
15 Adhesion	9
16 Troughability	9
17 Sampling	10
18 Identification	10
Annex A (informative) Items to be agreed between the manufacturer and purchaser	11
Annex B (informative) Helpful information to be supplied by the purchaser	12
Annex C (informative) Lateral drift — Straight running	14
Bibliography	15

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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. 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.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 14890 was prepared by Technical Committee ISO/TC 41, *Pulleys and belts (including veebelts)*, Subcommittee SC 3, *Conveyor belts*.

This second edition cancels and replaces the first edition (ISO 14890:2003), of which it constitutes a minor revision. It also incorporates Technical Corrigendum ISO 14890:2003/Corr.1:2006.

iTeh STANDARD PREVIEW (standards.iteh.ai)

[ISO 14890:2013](https://standards.iteh.ai/catalog/standards/sist/0473f50b-d9c5-4403-bca7-0790a5b149c8/iso-14890-2013)

<https://standards.iteh.ai/catalog/standards/sist/0473f50b-d9c5-4403-bca7-0790a5b149c8/iso-14890-2013>

Introduction

In the preparation of this International Standard, consideration has been given to the work of ISO Technical Committee ISO/TC41/SC3, and the following International Standards for conveyor belts have been followed as closely as possible:

- ISO 251;
- ISO 252;
- ISO 282;
- ISO 283;
- ISO 433;
- ISO 583;
- ISO 703.

iTeh STANDARD PREVIEW (standards.iteh.ai)

[ISO 14890:2013](https://standards.iteh.ai/catalog/standards/sist/0473f50b-d9c5-4403-bca7-0790a5b149c8/iso-14890-2013)

<https://standards.iteh.ai/catalog/standards/sist/0473f50b-d9c5-4403-bca7-0790a5b149c8/iso-14890-2013>

iTeh STANDARD PREVIEW
(standards.iteh.ai)

ISO 14890:2013

<https://standards.iteh.ai/catalog/standards/sist/0473f50b-d9c5-4403-bca7-0790a5b149c8/iso-14890-2013>

Conveyor belts — Specification for rubber- or plastics-covered conveyor belts of textile construction for general use

1 Scope

This International Standard specifies requirements for rubber and/or plastics covered conveyor belting of textile construction for general surface use on flat or troughed idlers.

This International Standard is not suitable or valid for light conveyor belts as described in ISO 21183-1.

Items that are not requirements of this International Standard, but need to be agreed between the manufacturer and the purchaser, are included in Annex A.

A list of the details intended to be supplied by the purchaser of belting with an enquiry is given in Annex B.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 37, *Rubber, vulcanized or thermoplastic — Determination of tensile stress-strain properties*

ISO 188, *Rubber, vulcanized or thermoplastic — Accelerated ageing and heat resistance tests*

ISO 252, *Conveyor belts — Adhesion between constitutive elements — Test methods*

ISO 282, *Conveyor belts — Sampling*

ISO 283, *Textile conveyor belts — Full thickness tensile strength, elongation at break and elongation at the reference load — Test method*

ISO 583, *Conveyor belts with a textile carcass — Total belt thickness and thickness of constitutive elements — Test methods*

ISO 703, *Conveyor belts — Transverse flexibility (troughability) — Test method*

ISO 4649, *Rubber, vulcanized or thermoplastic — Determination of abrasion resistance using a rotating cylindrical drum device*

ISO 10247, *Conveyor belts — Characteristics of covers — Classification*

ISO 16851, *Textile conveyor belts — Determination of the net length of an endless(spliced) conveyor belt*

EN 12882, *Conveyor belting for general purpose use — Electrical and flammability safety requirements*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1

tensile strength

greatest measured force during the tensile test divided by the width of the test piece

NOTE It is expressed in newton per millimetre (N/mm).

3.2 reference force reference load
one tenth of the nominal tensile strength in the longitudinal direction multiplied by the width of the test piece in millimetres

NOTE It is expressed in Newton.

EXAMPLE

Nominal tensile strength = 1 600 N/mm;
reference force = 160N/mm;
reference force for 25 mm test piece = 25mm × 160 N/mm = 4 000 N.

3.3 slab belting
conveyor belting made in wide widths and long lengths for subsequent slitting and cutting into narrower widths and shorter lengths to suit individual conveyor installations

3.4 solid woven belting
conveyor belting consisting of a carcass of more than one ply, the plies being interlocked in the weave or bound together by binding threads in the course of weaving

3.5 mono-ply belting
conveyor belting with a carcass consisting of one ply of woven textile fabric

iTeh STANDARD PREVIEW
(standards.itih.ai)

3.6 duo-ply belting
conveyor belting with a carcass consisting of two plies of woven textile fabric, bonded together by an intermediate layer of elastomer of sufficient thickness to allow the incorporation of a tension element in the joint

ISO 14890:2013

3.7 multi-ply belting
conveyor belting with a carcass of two or more plies of woven textile fabric, the adjacent plies being bonded together by an intermediate layer of elastomer

3.8 primary yarn
load carrying yarn that contributes more than 50 % of the tensile strength

3.9 secondary yarn
load carrying yarn that contributes less than 50 % of the tensile strength

4 Designation

4.1 Belting designation

Belting is designated by reference to the following conveyor belt characteristics:

- a) a reference to this International Standard, i.e. ISO 14890;
- b) the required length, in metres;
- c) the required width, in millimetres (see Table 4);
- d) the fibre type of the carcass, in both the warp and weft directions, e.g. polyester (E) (warp) and polyamide (P) (weft) (EP) (see Table 1);

- e) the full thickness tensile strength, in newton per millimetre, of belt width (see Table 8);
- f) the number of plies or belt type (see Clause 3);
- g) the top cover thickness, in millimetres;
- h) the bottom cover thickness, in millimetres (where relevant, see Clause 5);
- i) the cover classification (see Table 5), where appropriate;
- j) the safety category in accordance with EN 12882.

4.2 Examples for ordering

The following are examples for ordering.

a) EXAMPLE 1 Multi-ply belt

A 400 m long belt, 1 200 mm wide, textile material in the longitudinal direction of polyester (E) and in the transverse direction of polyamide (P), having a minimum full thickness tensile strength of 1 000 N/mm belt width, with five plies and a top cover thickness of 4 mm, a bottom cover thickness of 2 mm, a cover classification of H in accordance with Table 5, and complying with the safety requirements of category 1 of EN 12882.

Example 1 — Designation

ISO	Length	Width	Textile material		Tensile strength	No. of plies	Cover gauge		Cover class	Safety category in accordance with EN 12882
			Warp	Weft			mm	mm		
14890	m	mm	E	P	1 000 N/mm	5	Top	Bottom	H	1
	400	1 200					4	2		

b) EXAMPLE 2 Duo-ply belt

A 200 m long belt, 1 000 mm wide, textile material in the longitudinal direction of polyester cotton (EB) and in the transverse direction of polyamide cotton (PB), having a minimum full thickness tensile strength of 800 N/mm, with two plies and a top and bottom cover of 1,5 mm, complying with the safety requirements of category 2A of EN 12882.

Example 2 — Designation

ISO	Length	Width	Textile material		Tensile strength	No. of plies	Cover gauge		Cover class	Safety category in accordance with EN 12882
			Warp	Weft			mm	mm		
14890	m	mm	EB	PB	N/mm	5	Top	Bottom	N/A	2A
	200	1 000			800		1,5	1,5		

c) EXAMPLE 3 Mono-ply

A 150 m long, 1 200 mm wide Mono-ply belt, having a polyester warp (E) and a polyamide weft (P), a full thickness tensile strength of 630 N/mm belt width and a top cover thickness of 6 mm, a bottom cover thickness of 2 mm, and a cover classification of D in accordance with Table 5, complying with safety requirement of category 1 of EN 12882.

Example 3 — Designation

ISO	Length	Width	Textile material		Tensile strength	No. of plies	Cover gauge		Cover class	Safety category in accordance with EN 12882
	m	mm	Warp	Weft	N/mm		mm	Top		
14890	150	1 200	E	P	630	1	6	2	D	1

d) EXAMPLE 4 Solid woven belt

A 300 m long, 1 600 mm wide Solid Woven belt having a combined polyester and polyamide warp (EP) and a polyamide cotton weft (PB) and an integrally woven cotton (B) warp pile, having a minimum tensile strength of 1 250 N/mm belt width and 1,5 mm top and bottom covers, complying with safety requirement of category 3A of EN 12882.

Example 4 — Designation

ISO	Length	Width	Textile material		Tensile strength	No. of plies	Cover gauge		Cover class	Safety category in accordance with EN 12882
	m	mm	Warp	Weft	N/mm		mm	Top		
14890	300	1 600	EP(B)	PB	1 250	SW(1)	1,5	1,5	N/A	3A

(standards.iteh.ai)

Table 1 — Code designation of yarn
ISO 14890:2013

Code letter	Yarn
B	Cotton
Z	Staple rayon
R	Rayon
P	Polyamide
E	Polyester
D	Aramid
G	Glass

If a fabric contains a secondary yarn, its identity shall be indicated by the use of characters in parentheses to designate the yarn type.

5 Construction

The carcass shall consist either of one or more plies of woven fabric or of solid woven fabric and shall be impregnated or coated with a rubber or plastics mix.

Where a breaker consisting of open mesh fabric, or cord fabric or cord layer, is placed between the cover and carcass, or is embedded in the cover for the purpose of carcass protection, such a layer shall be considered part of the cover thickness and shall not be counted as a fabric ply.

If a fabric pile is integrally woven with the carcass on either one or both of the surfaces of the carcass, it shall be considered part of the carcass thickness.

NOTE The external surfaces of the conveyor belt generally consist of a defined thickness and quality of elastomeric material. Belting can also be supplied with one or both surfaces consisting of bare or coated fabric, as appropriate for the conveyor design and intended duty.

6 Length

6.1 Belting that is ordered to an open-ended length shall be supplied subject to the tolerances specified in Table 2.

6.2 The length of belting supplied in the spliced endless form shall be described by the term “net endless length”. The net endless length shall be supplied subject to the tolerances specified in Table 3 when measured in accordance with ISO 16851.

It is recommended that purchasers, where placing orders for belting, specify a length of belting which includes the lengths required for testing and any additional lengths necessary for vulcanized joints.

Table 2 — Tolerances on open-end lengths of belting

Belt delivery condition	Maximum permissible difference between delivered length and ordered length	
Slab belting	±5 %	
As one length	+ 2,5 % 0	
In several lengths	For each single length	For the sum of all lengths
	±5 %	+ 2,5 % 0

Table 3 — Tolerances on endless lengths of belting

Length of belt	Tolerance
Up to and including 15 m	±50 mm
Over 15 m and up to and including 20 m	±75 mm
Over 20 m	±0,5 %

7 Width

The width of the belting and its associated tolerance shall be one of those given in Table 4.