



## Trellex Steelcord Conveyor Belts





## Trellex Strongflex / Novobelt Conveyors

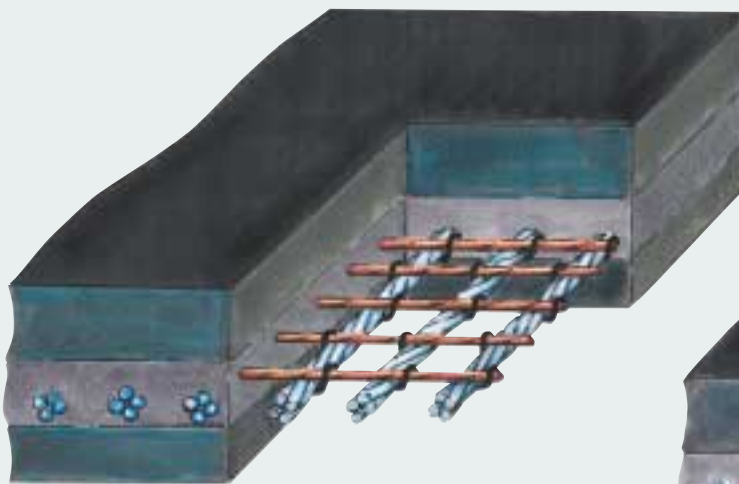
Trellex Strongflex and Novobelt conveyor belts have special properties due to their unique carcass construction. The reinforcement consists of steel cords with transverse polyamide or high elastic steel cords and is bonded with the adhesive rubber and cover plates to form a stable unit.

The rubber-steel laminate gives a high impact resistance as the steel cords embedded in the rubber can absorb

impact energy in both longitudinal and transverse directions.

The thin, elastic steel cords used as reinforcement in longitudinal direction allow low transition lengths, small pulley diameters and short take up lengths.

In combination with cover rubber from the wide Trellex range, the result is optimum adaptation to the application concerned.



STX

STWA



## Trellex Steelcord Conveyor Belts with different types of carcass

With Strongflex / Novobelt, we offer a range of cross-reinforced steelcord belts for conveying abrasive, hot or oily materials in the roughest of conditions.

The following belt types are available depending on application.

*Strongflex / Novobelt*

### **STX with elastic cords (E)**

The cord pitch and diameter have been selected to EN ISO 15236-2 C1 according to the nominal tensile strength, but above the cords a polyamide cord gives light transverse reinforcement.

Extra transverse reinforcements of steel or polyamide cords are possible.

*Strongflex / Novobelt*

### **STW A with elastic cords (E)**

According to EN ISO 15236-2 C2 like STX, but with a high-elastic steel cord lying across the cords.

The belt type to be chosen for standard applications.

*Strongflex / Novobelt*

### **STW B with elastic cords (E)**

As STW A but with high-elastic steel cords lying above and below the cords on both sides in transverse direction.

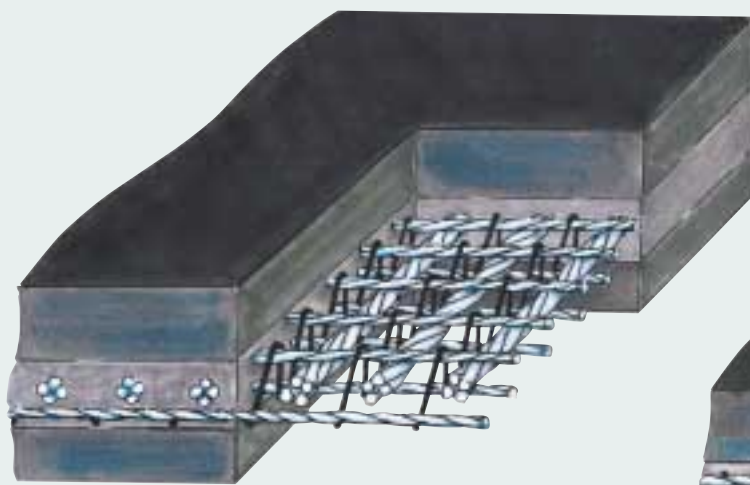
This belt type is suitable for higher impact.

*Strongflex / Novobelt*

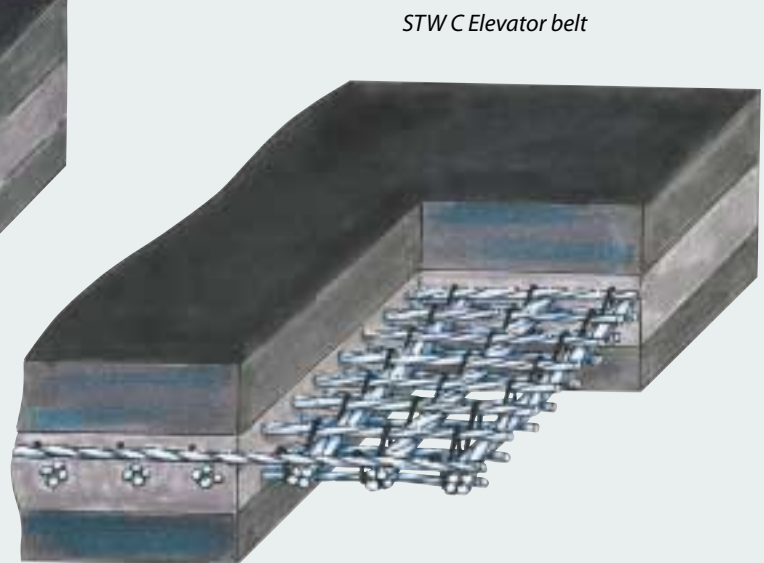
### **STW C elevator belt with elastic cords (E)**

As STW B but with low elongation steel cords lying close together on both sides above and below the cords in transverse direction.

This high transverse rigidity belt type is the standard for bucket elevators.



STW B



STW C Elevator belt

## Trellex Cover Grades for Steelcord Conveyor Belts

Trellex Grade	DIN	ISO	Permitted Temp.			Elastomer	Technical Properties Area of Application
			min. °C	perm. °C	peak °C		
Y	Y	L	-30	60		SBR	Abrasion-resistant for normal operating conditions in general conveyor technology
YW	W	D	-40	60		NR/BR	Highly abrasion-resistant for aggressive conveyed material with a high proportion of fine grains
AA	W	D	-30	60		SBR	
Y-30		D	-30	60		NR/BR	
X	X	H	-40	60		IR/NR/BR	Increased abrasion resistance, high cut and gouge resistance, for sharp-edged coarse conveyed material with great fall heights
TR	X	H	-30	80	100	SBR	Mechanical suitability to X, light thermal resistance and simultaneous low hydraulic oil effect, e.g. tunnel construction
TXT	T,Y		-15	130	150	SBR	Heat-resistant for material at moderately high temperatures <b>permitted temperature for elevator belts</b>
TK	T,S		-15	130	150	SBR	Heat-resistant like TXT, flame-retardant <b>permitted temperature for elevator belts</b>
TSTRP	T,C		-30	180	250	EPDM	High heat resistant, for very high mechanical stresses, in particular for elevator belts <b>permitted temperature for elevator belts</b>
RET	T,C		-30	190	250	EPM	Maximum heat resistance at high mechanical stresses, briefly up to 400°C, for clinker etc. <b>permitted temperature for elevator belts</b>
RETK	T,S		-30	190	250	EPM	High heat resistant and flame-retardant ISO 340, briefly up to 400°C with glowing clusters, for coke, sinter etc. <b>permitted temperature for elevator belts</b>
GPP	G		-25	60		NBR/SBR	Oil- and grease-resistant, e.g. for wood chips or in waste-recycling etc
S 100	S,Y		-25	70		NR/BR	Flame-retardant to ISO 340, high abrasion resistance
SK	S		-25	70		NR/SBR	Flame-retardant to ISO 340, for fine grain e.g. coal dust in power stations
VLS	DIN 22118		-25	70		CR/SBR	Self-extinguishing, for maximum flame-retardation requirements

### Symbols

NR	Natural rubber
SBR	Styrene-butadiene rubber
NBR	Nitrile rubber
EPDM	Ethylene-propylene-diene rubber
EPM	Ethylene-propylene rubber
CR	Chloroprene rubber
BR	Butadiene rubber
IR	Isoprene rubber

### Rubber Type

All covers are antistatic to DIN EN 20284.

The temperature data are related to the conveyed media.

Other grades for special applications are available on request.

## Belt Thickness and Weight

Belt type		STX	STX	STX	STX	STX	STX	STX
Tensile Strength	N/mm	500	630	800	1000	1250	1400	1600
Carcass thickness	mm	3,2	3,2	4,1	4,1	4,9	4,9	4,9
Standard cover	mm	5 + 3	5 + 3	6 + 4	6 + 4	6 + 4	6 + 4	8 + 4
Belt thickness	mm	11,2	11,2	14,1	14,1	14,9	14,9	16,9
Belt weight *	kg/m <sup>2</sup>	15	15,4	18,2	19,1	22	22,7	25,5

Belt type		STW A	STW A	STW A	STW A	STW A	STW A	STW A	up to
Tensile Strength	N/mm	500	630	800	1000	1250	1400	1600	3150
Carcass thickness	mm	3,2	3,2	4,5	4,5	6,0	6,0	6,0	**
Standard cover	mm	5 + 3	5 + 3	6 + 4	6 + 4	6 + 4	6 + 4	8 + 4	
Belt thickness	mm	11,2	11,2	14,5	14,5	16	16	18	
Belt weight *	kg/m <sup>2</sup>	15,2	15,5	19,2	20,1	24	24,7	27,5	

Belt type		STW B	STW B	STW B	STW B	STW B	STW B	STW B	STW B	STW B
Tensile Strength	N/mm	500	630	800	1000	1250	1400	1600	1800	2000
Carcass thickness	mm	4,7	4,7	5,4	5,4	7,1	7,1	7,1	7,1	7,1
Standard cover	mm	5 + 3	5 + 3	6 + 4	6 + 4	6 + 4	6 + 4	8 + 4	8 + 4	8 + 4
Belt thickness	mm	12,7	12,7	15,4	15,4	17,1	17,1	19,1	19,1	19,1
Belt weight *	kg/m <sup>2</sup>	17,1	17,6	21	21,6	25,4	25,9	29	29,8	30,1

Elevator belt		STW C	STW C	STW C	STW C	STW C	STW C	STW C	STW C	STW C	STW C
Tensile Strength	N/mm	500	630	800	1000	1250	1400	1600	1800	2000	up to 3150
Carcass thickness	mm	4,6	4,6	5,4	5,4	6,3	6,3	6,3	6,3	6,3	**
Standard cover	mm	4 + 4	4 + 4	4 + 4	4 + 4	5 + 5	5 + 5	5 + 5	5 + 5	5 + 5	
Belt thickness	mm	12,6	12,6	13,4	13,4	16,3	16,3	16,3	16,3	16,3	
Belt weight *	kg/m <sup>2</sup>	17,3	17,8	19,5	20,4	24,7	25,2	26	26,4	27	

Different cover thicknesses available in all grades.

\*) Approximate values depending on cover grade

\*\*) Available on request

## Available Ex-Stock

Type	Tensile Strength	Cover	Belt width in mm				
			650	800	1000	1200	1400
STW A	500	6+3 AA	●	●	●		
STW A	800	6+3 AA				●	
STW A	800	8+4 AA			●		●

Other types and belt widths available on request

### Minimum Width depending on Belt Troughability

Belt type	STX	STX	STX	STX	STX	STX	STX
Tensile Strength N/mm	STW A	STW A	STW A	STW A	STW A	STW A	STW A
	500	630	800	1000	1250	1400	1600
Troughing angle 20°	400	400	600	600	600	600	600
(three-roll 30°	500	500	600	600	600	600	600
troughing 40°	600	600	650	650	650	800	800
station) 45°	650	650	800	800	800	1000	1000

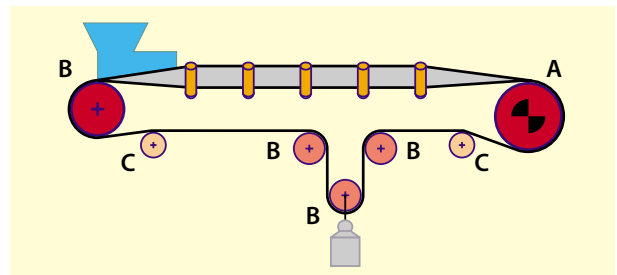
Belt type	STW B	STW B	STW B	STW B	STW B	STW B	STW B	STW B	STW B
Tensile Strength N/mm	500	630	800	1000	1250	1400	1600	1800	2000
Troughing angle 20°	500	500	500	500	600	600	600	600	600
(three-roll 30°	600	600	600	600	600	600	600	600	600
troughing 40°	650	650	800	800	800	800	800	800	800
station) 45°	800	800	1000	1000	1000	1000	1000	1000	1000

The Strongflex Elevator belt STW C is not troughable

### Pulley Diameter

Minimum pulley diameter in mm

- Pulley type A** Drive pulley or other pulleys in areas of high belt tension
- Pulley type B** Reversing pulleys in areas of low belt tension
- Pulley type C** Snub pulleys, deflection angle  $\leq 30^\circ$



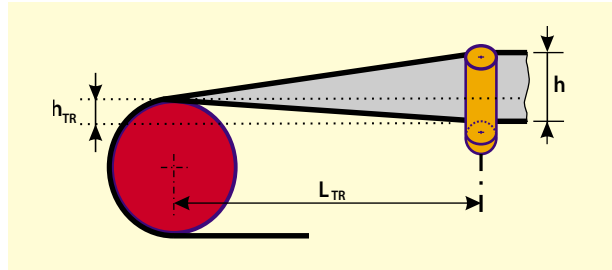
Belt type	STX	STX	STX	STX	STX	STX	STX	STX	STX	STX
Tensile Strength N/mm	STW A	STW A	STW A	STW A	STW A	STW A	STW A	STW A	STW B	STW B
	500	630	800	1000	1250	1400	1600	1800	2000	
Pulley A mm	315	315	400	400	500	500	500	630	630	
Pulley B mm	250	250	315	315	400	400	400	500	500	
Pulley C mm	200	200	250	250	315	315	315	400	400	

Elevator belt	STW C	STW C	STW C	STW C	STW C	STW C	STW C	STW C	STW C	STW C	STW C
Tensile Strength N/mm	500	630	800	1000	1250	1400	1600	1800	2000	up to 3150	
Pulley A mm	500	500	630	630	710	800	900	1000	1250	**	
Pulley B mm	500	500	630	630	710	800	900	1000	1250		

\*\*\*) Available on request

## Transition Lengths

The belt transition between troughed and flat shape at the head and rear pulleys stretches the belt edges. This gives an uneven distribution of stresses which can lead to overtensioning of the belt edges. Under relatively low belt tension, certain areas of the belt can even be compressed. These stresses should also be avoided.



Troughing angle Pulley elevation	Approximate values for minimum transition length $L_{TR}$ (B=belt width)							
	$h_{TR}=0$	$h_{TR}=h/3$	$h_{TR}=0$	$h_{TR}=h/3$	$h_{TR}=0$	$h_{TR}=h/3$	$h_{TR}=0$	$h_{TR}=h/3$
Strongflex STX, STW A, STW B	1,9 x B	1,6 x B	2,2 x B	1,9 x B	2,5 x B	2,1 x B	2,7 x B	2,4 x B

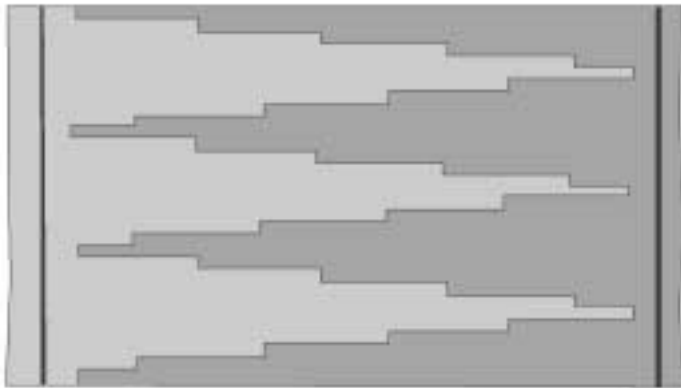
In cases where extreme dimensioning of the transition lengths is particularly important, a precise check of the stress distribution can be performed on request.

## Belt Splicing

Strongflex / Novobelt conveyor belts should always be spliced by hot vulcanisation.

The joint geometry of the stepped finger splice has been optimised by dynamic tests so that when Trellex splicing material is used, the belt retains the right permanent strength for practical use.

As well as optimum strength, these joints guarantee an even and straight path over pulleys and idlers.



Trellex steelcord belts can be closed endless by mechanical hook connectors for emergency use and for fast belt change.

Almost all Trellex elevator belts type STW C are closed endless using special mechanical fasteners.

Belt strength N/mm	Splice length with normal cover mm	Splice length with RET, RETK, TSTRP mm
350	610	700
500	610	700
630	610	700
800	700	835
1000	835	1060
1250	1060	1285
1400	1285	1510
1600	1285	1510
1800	1285	1510
2000	1285	1510

See the splicing instructions in each case for details.

## Trellex Conveyor Belts

### Our range:

Aramid conveyor belts  
Elevator belts  
Belts for closed conveying  
Cleat belts  
Flame resistant belts  
Belts for vertical conveying  
Belts with profiled surface

Paper roll belts  
Flat transmission belts  
Heat resistant belts  
Chemical resistant belts  
Plasterboard belts  
Oil and grease resistant belts  
Multi-ply textile conveyor belts

Endless produced belts  
Process belts  
Steelcord conveyor belts  
PVC belts  
PU belts  
Wear resistant belts

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