

The “BeltSiFLEX®” Concept

The belts – provided with sidewalls and cleats – have been developed mainly for very steep angle conveying, up to a gradient of 90° (vertical plane).

The belts have a high degree of flexibility, which enables effective transition from horizontal to inclined conveying and vice versa. Belts can be adapted to different patterns or arrangements to suit client arrangements.

- The belt construction increases carrying capacity by up to 4 times compared to other kinds of traditional belts in the same width range.
- A sidewall elevator saves floor space by allowing the vertical elevation of materials, up to a gradient of 90°.
- Due to the reduced number of components, the overall cost of the system as well as the maintenance cost is lower than that of a comparable installation with traditional conveyors.



Technological Innovation

- The result of a heavy investment in R & D, the Beltsiflex system has revolutionized the way in which conveyor belts are manufactured.
- Unlike other conveyor belt systems on the market, the Beltsiflex system is produced by a hot vulcanisation process, providing safety, stability and durability.
- The adhesion achieved through the hot vulcanisation process is 15 times that of cold connection methods; reducing the risk of system disintegration which up to now has been a problem.
- Another advantage of the system is that it can be used on small pulley diameters; and longer stocking periods do not negatively affect the adhesion of the elements to the belt base.

Please refer to instruction manual for correct installation.
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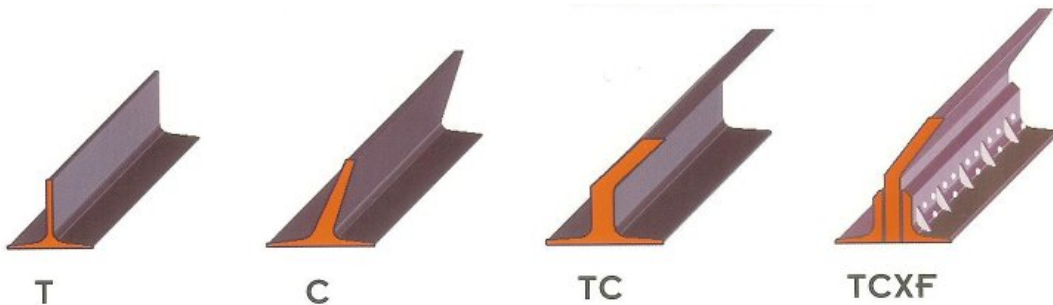
Cleats

The production of our transverse cleats or profiles is always by moulding in a press, resulting in a superior and consistent finish. The qualities of rubber used will be a function of the characteristics of the material and products to be transported, always fulfilling the most demanding tolerances of wear resistance and abrasion strength.

We can offer the profiles manufactured with textile inserts as reinforcement, this being advisable for cleat profile heights greater than 140 mm.



Types of cleats



It is recommended that the height of the cleats should be 10 to 20 mm lower than the height of the sidewalls.

The types T, C, TC and TCXF differ principally in their loading capacity and their utilization will depend on the specific transportation needs, material properties and angle and required capacity of the conveyor.

The type TCXF consists of three elements, two bases hot vulcanised to the base belt, with a transverse cleat screwed to these bases (which is always manufactured with fabric reinforcement)

Criteria for cleat selection

To define the height of the cleats in a Beltsiflex installation, we use the same formulas as for the volume calculation of a conventional conveyor belt.

For products with big granular size:

To avoid loss of material through projection during transport or machine stops due to choke condition, we need to pay attention to 3 criteria all in relation to the maximal granular size. Those criteria will always be the minimum measurements that we need to increase according to the required conveying capacity.

Distance between cleats:

The space between cleats needs to be at least 2 times the maximum granular size.

Width of the cleat:

The width of the cleat needs to be at least 2,5 times the maximum granular size

Height of the cleat:

To define the minimum height of the cleat, we need to take into account 2 factors:

- again, the maximum granular size
- The degree of the slope of the belt

Rules:

Degree of slope: $0 \div 60^\circ$

Height of the cleat: $0,75 \div 1,0 \times \text{granular size ("g")}$

Degree of slope: $60 \div 75^\circ$

Height of the cleat: $1,0 \div 1,2 \times \text{granular size ("g")}$

Degree of slope: $75 \div 90^\circ$

Height of the cleat: $1,5 \times \text{granular size ("g")}$







The height of the sidewall always needs to be 10-20mm higher than that of the selected cleat. For vertical transport, we always use a "TC" type cleat.

For products with big granular size:

The filling level of the cleats is never 100%. The capacity always needs to be calculated with at 75% fill level, as shown on the illustration. For materials of small granular size the spacing in between the cleats should be as small as possible to ensure maximum efficiency; depending on the type of selected cleat, the minimum spacing will be different.

The width of the belt will be selected dimensions, height of the conveyor et required loading capacity.

Types of cleats

TIPO	Altura mm.	Anchura base mm.	Peso kg/m	Max. longitud de Fabricación mts.	Calidades del caucho	Ø Tambor matriz y de reenvío	Ø Poleas de inflexión	Refuerzo Textil	Forma del Taco
T-35	35	65	0,85	5,000	N / G / S / RC	140	180	SIN Refuerzo Textil	
T-50	50	80	1,45	2,400	N / G / S / RC	140	180		
T-75	75	100	2,55	2,400	N / G / S / RC	180	350		
T-90	90	100	2,80	2,400	N / G / S / RC	240	375		
T-110 / TF-110	110	100	3,10	2,400	N / G / S / RC	240	375	CON y SIN Refuerzo Textil	
T-140 / TF-140	140	150	5,95	2,400	N / G / S / RC	420	560		
T-160 / TF-160	160	150	6,45	2,400	N / G / S / RC	480	640		
T-180 / TF-180	180	150	6,75	2,400	N / G / S / RC	540	720		
C-75 / CF-75	75	85	1,80	2,400	N / G / S / RC	185	300	CON y SIN Refuerzo Textil	
C-110 / CF-110	110	95	2,70	2,400	N / G / S / RC	250	350		
TC-75 / TCF-75	75	80	2,00	2,400	N / G / S / RC	185	300	CON y SIN Refuerzo Textil	
TC-90 / TCF-90	90	110	2,65	2,400	N / G / S / RC	220	325		
TC-110 / TCF-110	110	110	3,10	2,400	N / G / S / RC	250	350		
TC-140 / TCF-140	140	150	5,80	2,850	N / G / S / RC	420	560		
TCF-160	160	150	6,45	2,850	N / G / S / RC	480	640	Solo CON Refuerzo Textil	
TCF-180	180	150	7,10	2,850	N / G / S / RC	540	720		
TCF-220	220	170	8,50	2,850	N / G / S / RC	660	880		
TCF-240	240	170	9,15	2,850	N / G / S / RC	720	960		
TCF-260	260	170	9,80	2,850	N / G / S / RC	780	1.040		
TCF-280	280	170	10,40	2,850	N / G / S / RC	840	1.120		
TCXF-280	280	280	19,70	2,400	N / G / S / RC	950	1.300	Solo CON Refuerzo Textil o Metálico	
TCXF-330	330	280	23,70	2,400	N / G / S / RC	1.200	1.500		
TCFX-380	380	280	25,00	2,400	N / G / S / RC	1.350	1.750		
TCFX-480	480	280	31,70	2,400	N / G / S / RC	1.700	2.200		
TCXF-580	580	280	36,10	2,400	N / G / S / RC	2.100	2.650		

References with the letter F mean construction with a textile insert.

The diameters shown have been calculated for N type quality and are a guideline only. It is necessary to do an exact calculation for each project.

Quality of the rubber

N = normal quality

S = flame resistant

G = oil and fat resistant

RC = heat resistant up to 130°C



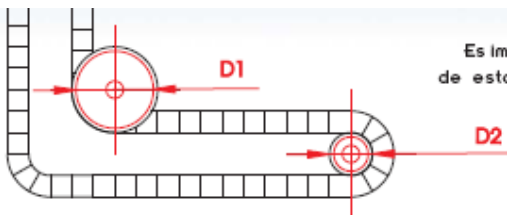
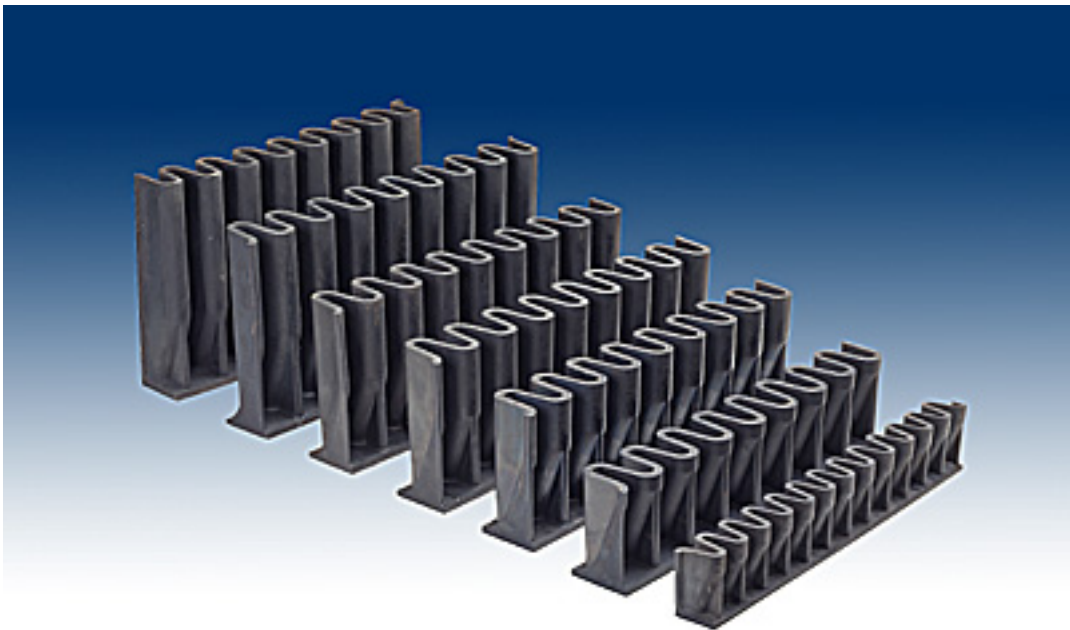
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Sidewalls

The range of sidewalls comprises many different heights, ranging from 40mm up to 600mm.

All sidewalls are available with a reinforcing textile insert, which recommended for heights from 140mm and necessary from 160mm.

The design of the sidewall offers a good vertical resistance giving greater stability to the belt and maintaining a high degree of flexibility making it suitable for the use on smaller pulley sizes.



Es importante respetar los diámetros mínimos exigidos, de esta forma conseguiremos la máxima vida útil.

Como regla tomamos:

$D1 = 4 \times$ altura del borde.

$D2 = 3 \times$ altura del borde.

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Types of sidewalls

TIPO	Altura mm.	Anchura base mm.	Peso Kg/m	Max. longitud de Fabricación mts.	Cualidades del caucho	Paso de Onda	Ø Tambor motriz y de reenvío	Ø Poleas de Inflexión	Refuer
N-40	40	40	1,00	500	N / G / S / RC	47	100	160	
N-60	60	40	1,40	400	N / G / S / RC	47	150	240	SIN Refu
N-80	80	40	1,80	300	N / G / S / RC	47	200	320	
S-80 / SF-80	80	50	1,80	300	N / G / S / RC	50	240	320	
S-100 / SF-100	100	50	2,30	300	N / G / S / RC	50	300	400	CON Refuer
S-120 / SF-120	120	50	2,70	300	N / G / S / RC	50	325	480	
S-140 / SF-140	140	50	3,10	250	N / G / S / RC	50	400	560	
BSF-120	120	75	4,00	250	N / G / S / RC	60	360	480	
BSF-140	140	75	4,60	200	N / G / S / RC	60	420	560	
BSF-160	160	75	5,20	150	N / G / S / RC	60	480	640	
BSF-180	180	75	5,80	125	N / G / S / RC	60	540	720	
BSF-200	200	75	6,40	125	N / G / S / RC	60	600	800	Sol Refuer
BSF-220	220	75	7,00	125	N / G / S / RC	60	660	880	
BSF-240	240	75	7,60	125	N / G / S / RC	60	720	960	
BSF-260	260	75	8,20	125	N / G / S / RC	60	780	1040	
BSF-280	280	75	8,80	125	N / G / S / RC	60	840	1120	
BSF-300	300	75	9,40	125	N / G / S / RC	60	900	1200	
MSF-300	300	115	15,05	100	N / G / S / RC	83	1050	1350	
MSF-350	350	115	17,50	100	N / G / S / RC	83	1200	1500	
MSF-400	400	115	19,90	100	N / G / S / RC	83	1400	1800	
MSF-500	500	115	24,75	100	N / G / S / RC	83	1750	2250	Sol Refuer
MSF-600	600	115	29,60	100	N / G / S / RC	83	2100	2700	

References with the letter F mean construction with a textile insert.

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Quality of the rubber

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Conveyor belt base

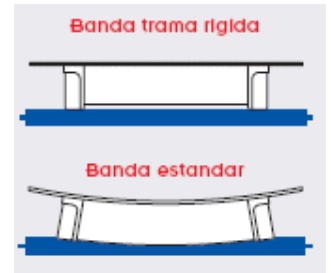
A critical component for the reliable operation of the sidewall belt is the incorporation of fabrics or metallic wires that provide necessary transverse rigidity to the base belt.

The Beltsiflex conveyor belt base uses the most advanced fabrics for this application, to provide superior stability and resist the substantial forces at the critical flexing points, preventing deformation of the belt whilst retaining longitudinal flexibility.

The use of cross stability rigid belts offers significant advantages:

- Provides better support on the return strand.
- Avoids the wear and tear of sidewalls and cleats.
- Prevents the crowning of the carrying surface at deflection points.
- Prevents the loss of driving power.

A wrong selection of the appropriate band during the construction of this product, without rigid frame or with inadequate frames can cause an inadequate performance of the system or in the best case, product life would be seriously reduced.



All XEM, EMXSC and XWXSC belt types are manufactured in the following rubber compound varieties:

- N Abrasion resistant**
- G Oil and grease resistant**
- S Flame retarded**
- RC Heat resistant up to 150 °C**

We manufacture belts with different covers and widths other than standard ones on request



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Types of belts

Cross stability rigid fabric belts: Type "XEM"

Manufactured with fabric inserts, they are produced just as the BeltSiFLEX® elevated belting systems .

They provide greater stability than the common used EP fabrics (polyester-nylon) by adding to these one or two monofilament fabrics to achieve the rigidity most suitable for the belt's characteristics.

Type	Covers		Thickness mm.	Weight Kg/m	N° of fabrics		Driving and return drum	Inflexion pulleys
	TOP	Bottom			Tensioning	Weave		
XEM250/2+1TR	2	0	7,00	5,89	2	1	315	350
XEM250/2+1TR	3	1,5	8,50	8,60	2	1	315	350
XEM400/3+2TR	4	2	11,50	11,25	3	2	450	500
XEM500/3+2TR	4	2	11,80	11,56	3	2	500	600
XEM630/4+2TR	4	2	12,90	12,55	4	2	600	750
XEM800/4+2TR	4	2	13,50	13,00	4	2	750	1000
XEM800/5+2TR	4	2	14,00	13,55	5	2	800	1000
XEM1000/5+2TR	4	2	14,75	14,10	5	2	1000	1200
XEM1250/5+2TR	4	2	15,85	14,80	5	2	1200	1400

*The diameters here indicated are merely for reference, being necessary to calculate them for each specific project.

Cross stability rigid fabric belts: Type "EMXSC"

Manufactured with fabric inserts, they are produced just as the BeltSiFLEX® XEM type but differ from this in that their rigidity is achieved by inserting one or to metal cords across the band.

This type of belt is recommended when the rigidity needed is not satisfied by the XEM type. It is particularly indicated for the transportation of large productions, and heavy duty applications requiring significant width dimensions.

Type	Type of cross stability weave	N° of rigid cross weaves		N° of fabrics in tensioning plies	Driving and return drum	Inflexion pulleys
EMXSC800	BF500	1	EM200	4	900	1200
		2	EM160	5		
EMXSC800	BF800	1	EM200	5	1000	1250
		2	EM160	5		
EMXSC1000	BF500	1	EM200	5	1000	1250
		2	EM200	5		
EMXSC1000	BF800	1	EM200	5	1200	1300
		2	EM200	5		
EMXSC1250	BF500	1	EM250	5	1200	1300
		2	EM250	5		
EMXSC1250	BF800	1	EM250	5	1200	1400
		2	EM250	5		
EMXSC1600	BF500	1	EM250	6	1300	1500
		2	EM400	4		
EMXSC1600	BF800	1	EM250	6	1400	1600
		2	EM400	4		
EMXSC2000	BF500	1	EM400	5	1500	1800
		2	EM400	5		
EMXSC2000	BF800	1	EM400	5	1600	2000
		2	EM400	5		

Maximum width manufactured: 2.200 mm.

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Cross stability rigid metal cord belts: Type “XWXSC”

This belt differs from type EMXSC in that it also incorporates metal cord tensioning along the belt and is used for the construction of big installations where the belt, not only supports high productions, but is also of large dimensions. The elongation values of this type of belts are nearly null.

The weight and thickness of these belts will depend on the rubber cover applied in each case.

Typo	Type of cross stability weave	Nº type of cross stability weave	Drive and return pulley	Inflexión pulleys
XWXSC1600	BF500	1	800	1200
		2		
XWXSC1600	BF800	1	900	1250
		2		
XWXSC2000	BF500	2	1200	1300
XWXSC2000	BF800	1	1200	1300
		2		
XWXSC2500	BF800	2	1500	1800
XWXSC3500	BF800	2	1600	1800
XWXSC5000	BF800	2	2300	2500

Maximum width manufactured: 2.200 mm.

* The diameters for both EMXSC and XWXSC belts here indicated are merely for reference, being necessary to calculate them for each specific project according to the installation's dimensions and the qualities specified for the application.