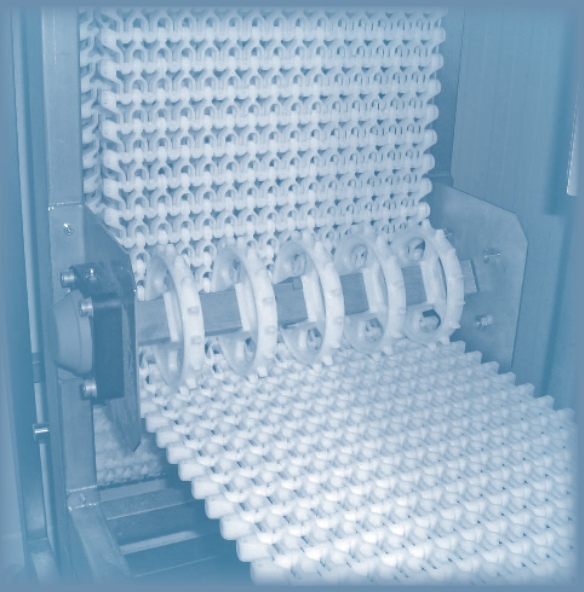
MATERIALS

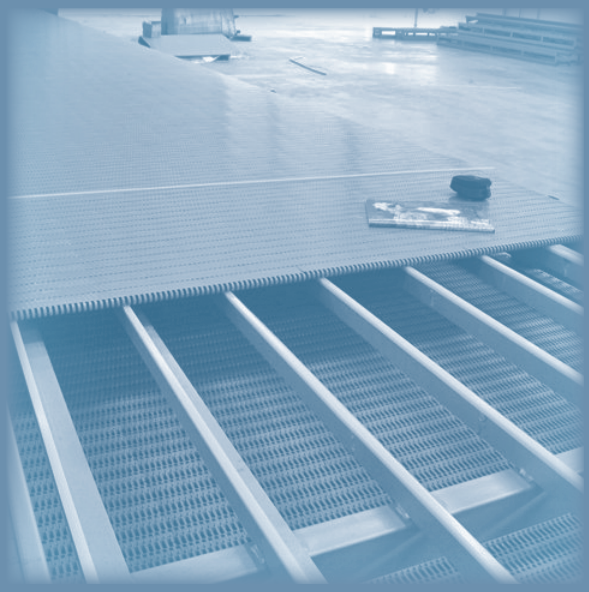
ACCESSORIES

TECHNICAL DATA

CHEMICAL RESISTANCE

MAINTENANCE





MATERIALS

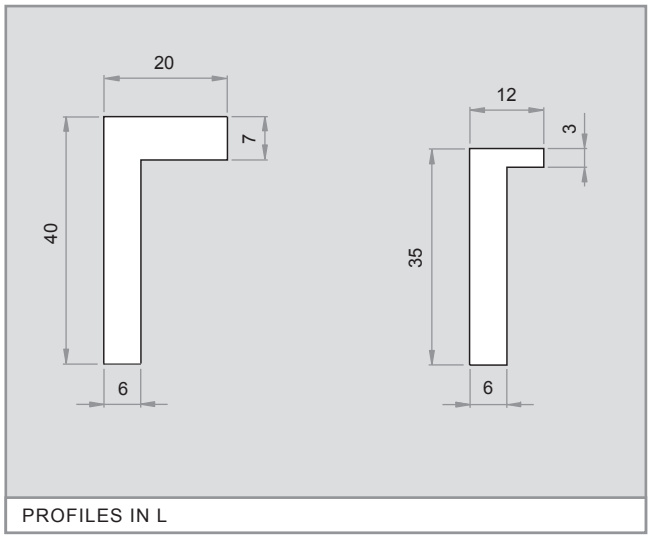
ACCESSORIES

TECHNICAL DATA

CHEMICAL RESISTANCE

MAINTENANCE

ACCESSORIES [HOLD-DOWN PROFILES]

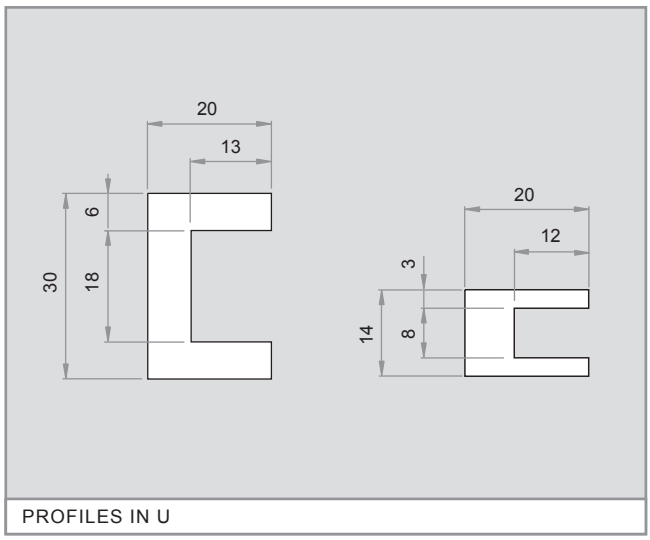


PROFILES IN L

To make the fastening and the support of the belt, EUROBELT has designed two types of hold-down profiles with different geometries, but with the same uses and services.

These profiles, with a low coefficient of friction, are placed between the belt and the structure of the conveyor, reducing the wear of the surfaces in contact, which contributes to prolong the life of the belt.

EUROBELT offers all the hold-down profiles in special polyethylenes with very good sliding properties and an excellent resistance to impact.

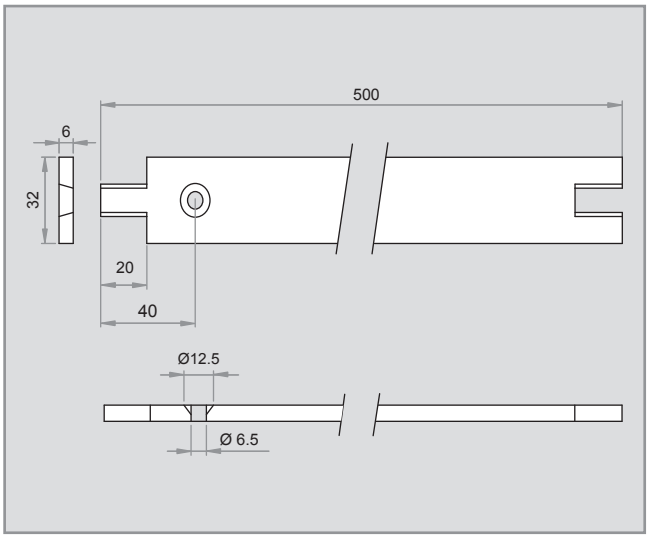


PROFILES IN U

Accessories	Dimensions	Materials
Profiles in L	40 x 20 x 2.000	Polyethylene
	35 x 12 x 2.000	
Profiles in U	20 x 30 x 2.000	
	20 x 14 x 2.000	

[Dimensions in mm]

ACCESSORIES [WEARSTRIPS]



The flat wearstrips are fastened by means of flatheaded plastic screws, which contributes to obtain a smooth surface free of any possibility of hooking.

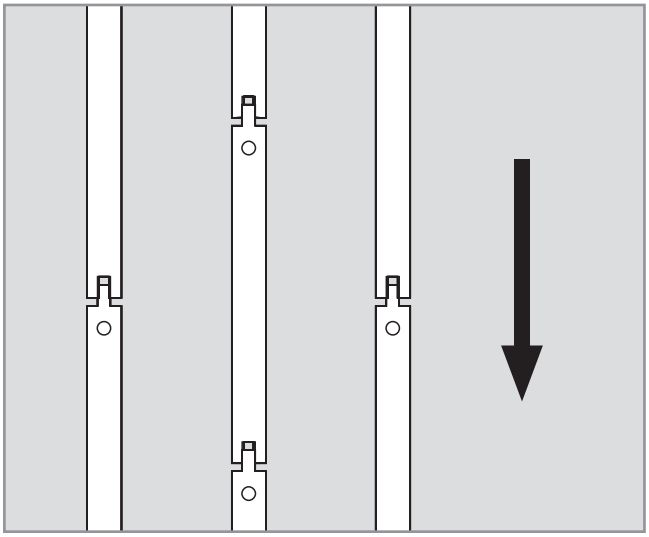
The dimensions of those screws are: M 6 x 25 mm.

Due to their dovetail design, they can adapt to possible longitudinal contractions and expansions of the belt.

Dimensions	Materials
6 x 32 x 500	Polyethylene Conductive polyethylene Polyacetal

The wearstrips arrangement is an important factor in the life span of a conveyor belt. It should be chosen the most suitable configuration according to the transport needs. To calculate the quantity of supports, the weight of the product to be conveyed should be taken into account.

PARALLEL RUNNERS



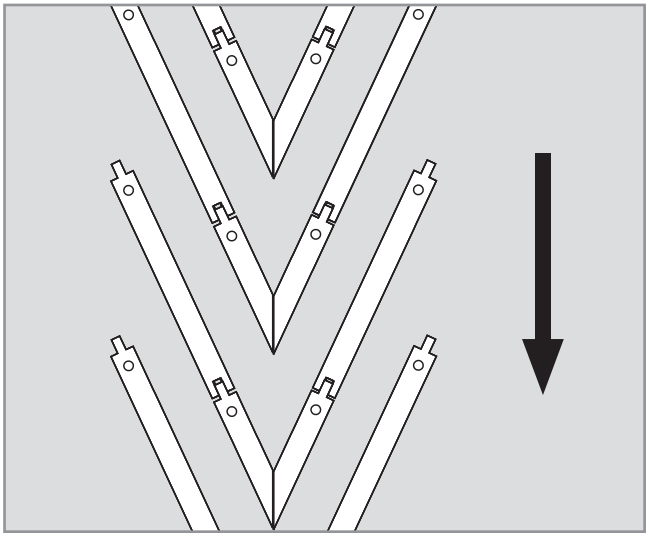
It consists of placing the wearstrips in a parallel and continuous way along the conveyor structure.

It is preferable to position them so that the joints do not coincide.

This is probably the simplest and most economical configuration although, depending on the load to be transported, uneven wears can arise on the back surface of the belt.

It is not advisable for applications with a very heavy load.

CHEVRON ARRAY



The wearstrips are placed throughout the length and breadth of the conveyor, as shown in the picture above.

The possible wear that might occur will be even all over the belt, since it is resting on the wearstrips lengthwise and breadthwise.

With this angle-shaped layout the cleaning and the removal of wastes are easy.

It is advisable for applications bearing heavy loads or for high speeds.

[Dimensions in mm]

MATERIALS [POLYPROPYLENE]

STANDARD POLYPROPYLENE (PP)

Temperature range	+1 ºC to +104 ºC
Available colours	White Grey Blue
Fit for food industry	Suitable

It is the basic material in order to manufacture conveyor belts for most of processes, both in food industry and in industry generally speaking.

With a good mechanic resistance, and a temperature range from +1 ºC to +104 ºC, it has a specific gravity of approximately 0.9, and it floats in the water.

Given its excellent chemical resistance to most of the acids and concentrated bases, salts, and detergents, it is essential for corrosive work environments.

It is very resistant to penetration of micro organisms.

Though it has a resistance to impact close to 3.5 kJ/m^2, it becomes slightly fragile at temperatures below 9 ºC. That is why it is not recommended for processes in which there will be strong impacts on the belt.

It observes the International Regulations to be used in food processes.

ELECTRICALLY CONDUCTIVE POLYPROPYLENE (PPE)

Temperature range	+1 ºC to +104 ºC
Available colours	Black
Fit for food industry	Unsuitable

Polypropylene with a very low resistivity rate, both volumetric and superficial, being ideal for those applications in which it is necessary to dispel the electrostatic charges, created on the belt, through the conveyor's structure.

Specially indicated for conveyance applications in environments classified as ATEX.

Unsuitable for direct contact with food.

Ask for availability and delivery time according to belt types and series.

MATERIALS [POLYETHYLENE]

STANDARD POLYETHYLENE (PE)

Temperature range	-50 ºC to +65 ºC
Available colours	Natural Blue
Fit for food industry	Suitable

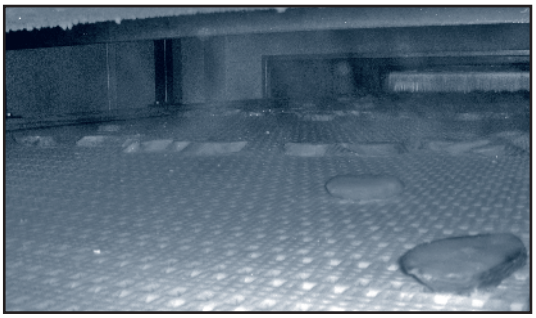
Thanks to a temperature range from -50 ºC to +65 ºC, it is the most suitable material for belts to be used in freezing processes.

With a specific gravity of 0.95 approximately, it floats in the water. It stands out for its excellent resistance to impact and fatigue, and for its flexibility.

Good chemical resistance to many acids and concentrated bases, salts, and detergents.

Its low coefficient of friction provides excellent sliding properties, with a minimum of adherence and absorption.

It observes the International Regulations to be used in food processes.



ELECTRICALLY CONDUCTIVE POLYETHYLENE (PEE)

Temperature range	-50 ºC to +65 ºC
Available colours	Black
Fit for food industry	Unsuitable

Polyethylene with a very low coefficient of resistivity, both volumetric and superficial, which makes it ideal for those applications in which it is necessary to dispel the electrostatic charges, created on the belt, through the conveyor's structure.

Special for conveyance applications at low temperatures in environments classified as ATEX.

Unsuitable for direct contact with food.

Ask for availability and delivery time according to belt types and series.

UV-RAYS POLYETHYLENE

We have a black polyethylene resistant to UV rays for conveyor belts to be used in applications that will be out in the open, at low temperatures, and exposed to solar radiation.

Black colour.

Ask for availability and delivery time according to belt types and series.

MATERIALS [POLYACETAL]

STANDARD POLYACETAL (AC)

Temperature range	-40 ºC to +90 ºC
Available colours	White Grey Blue
Fit for food industry	Suitable

With a specific gravity of 1.5 approximately, the technical polyacetals are thermoplastics of low friction coefficient with the greatest resistance to scratching and breakage. That is why it is the material used in accumulation tables for all kind of containers, as it avoids any damage on the product surface, as well as crushing.

Its great mechanical resistance enables it to transport heavy loads.

With a wide temperature range from -40 ºC to +90 ºC, it is used for manufacturing belts that will convey heavy loads and in applications involving the use of sharp tools.

It has a good chemical resistance to solvents, greases, and a large list of chemicals.

It observes the International Regulations to be used in food processes.

ELECTRICALLY CONDUCTIVE POLYACETAL (ACE)

Temperature range	-40 ºC to +90 ºC
Available colours	Black
Fit for food industry	Unsuitable

Polyacetal with a very low resistivity rate, both volumetric and superficial, being ideal for those applications in which it is necessary to dispel the electrostatic charges, created on the belt, through the conveyor's structure.

Unsuitable for direct contact with food.

Ask for availability and delivery time according to belt types and series.

POLYACETAL DETECTABLE BY METAL DETECTORS (ACD)

Temperature range	-40 ºC to +80 ºC
Available colours	Blue
Fit for food industry	Suitable

This material has the capability of altering the electromagnetic fields of the metal detectors. It is used in belts for lines in which avoiding any plastic particle to get mixed with the product is required.

Suitable for direct contact with food.

Ask for availability and delivery time according to belt types and series.

MATERIALS FOR SPECIAL APPLICATIONS

NYLON (PA)

Belts manufactured in nylon have a good geometrical stability with regard to heat, as well as both a great hardness and rigidity.

They are also characterized by their retarded wear in abrasive and dry environments.

Having a high hygroscopic level, this material is not recommended to be used in humid environments, as the belt dimensions would vary visibly.

We have two types:

Nylon in black colour: Unsuitable for direct contact with food.

Stable with regard to heat at temperatures up to 140 ºC if working continuously, and up to 180 ºC in specific peaks. In case of extreme temperatures, the decrease of its mechanical properties must be taken into account.

Its rate of inflammability is HB (Test method UL94 rating at 1.6 mm thickness).

Nylon in natural colour: Suitable for direct contact with food, except for those containing alcohol.

Stable with regard to heat at temperatures up to 120 ºC if working continuously, and up to 135 ºC in specific peaks.

Likewise, in case of extreme temperatures, the decrease of its mechanical properties must be taken into account.

Its rate of inflammability is V-2 (Test method UL94 rating at 1.6 mm thickness).

Ask for availability and delivery time according to belt types and series.

THERMOPLASTIC ELASTOMERS (TPE)

It is a thermoplastic vulcanized, flexible and with a very good adherence. It is used for obtaining the maximum grip of the product to the transport surface in order to prevent it from sliding in incline conveyors.

Good resistance to fatigue, oil, and chemicals in general.

The temperature range runs from -40 to 100 ºC.

When designing an application with belts manufactured in this material, we should take into account:

- The environmental conditions regarding the work area (temperature, humidity, possible spilling of liquids, etc.).

- The geometrical peculiarities of the application (inclination degrees, speed, possible vibrations, etc.).

- The characteristics of the product (weight, dimensions, material of its packing, etc.).

- The belt return way will be designed avoiding always the friction of the rubber on the support surfaces, on the inverse turn rollers, etc.

We have three hardness grades:

Shore A35, in grey colour, suitable for direct contact with food.

Shore A45, in black colour, unsuitable for direct contact with food.

Shore A60, in beige colour, suitable for direct contact with food.

Ask for availability and delivery time according to belt types and series.

MATERIALS FOR SPECIAL APPLICATIONS

MATERIAL DETECTABLE BY X-RAYS DETECTORS (ACX)

Temperature range	-40 ºC to +80 ºC
Available colours	White
Fit for food industry	Suitable

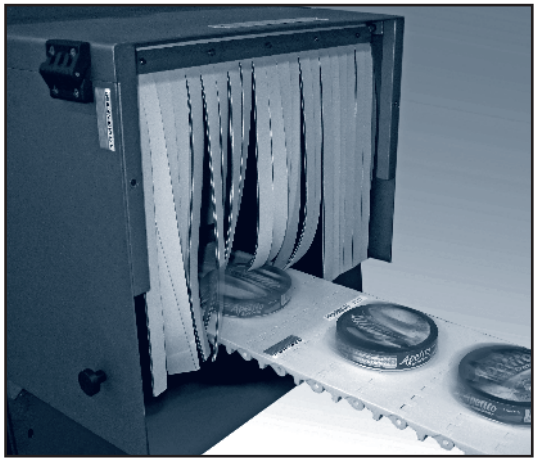
Material that can be detected by the X-rays. Spherical particles with a diameter of hardly 2.5 mm have been detected in tests carried out in a production line by a Dylog X-rays detector.

Exceptional for processes in which the removal of any polluting particle is essential or in which a high security control is required.

In white colour, its work temperature range runs from -40 to +80 ºC.

Suitable for direct contact with food.

Ask for availability and delivery time according to belt types and series.



WEAR-RETARDANT MATERIAL

Special material to prolong the average life of the belts, as their wear gets reduced when working in abrasive environments.

It is used in all those applications in which the belt is exposed to scratches due to the abrasion caused by the product itself or by other elements like sand, abrasive dust, etc.. conveyed together with it.

Unsuitable for direct contact with food.

Ask for availability and delivery time according to belt types and series.

FLAME-RETARDANT

With good mechanical properties and chemical resistance, it is retardant to the flames with an inflammability rate of V-0 (Test method UL94).

As it is lubricated, it has both a very low absorption rate and friction coefficient.

This material is not suitable for direct contact with food, and its work temperature range runs from -20 to +60 ºC.

Ask for availability and delivery time according to belt types and series.

HIGH TEMPERATURE MATERIAL

This material is one of the most important polymers due to its excellent properties.

- Continuous working temperature up to 200 ºC.

- High fatigue resistance, both mechanical and chemical.

- Flame retardant, V-0 inflammability ratio.

- Low water absorption, near zero (0.02%)

- Suitable for direct contact with food.

Ask for availability and delivery time according to belt types and series

TABLE OF MATERIALS AND COLOURS IN STOCK

TYPE		PP			PE		AC			PPE
		W	G	B	N	B	W	B	N	O
SERIES C12										
FT	FLAT TOP	•	•	•	•	•		•		
FG	FLUSH GRID	•	•	•	•	•		•	•	
SERIES E20										
FT	FLAT TOP	•	•	•	•	•		•		
FG	FLUSH GRID	•	•	•	•	•		•		
RR	RAISED RIB		•					•		
TF	TRIAN FRICTION	On Request *[page 188]*								
TR	TRIAN	•			•			•		
SR	SLIDING ROLLER	On Request *[page 188]*								
SERIES A24										
FT	FLAT TOP	•	•	•	•	•		•	•	
FG	FLUSH GRID	•	•	•	•	•		•	•	
RR	RAISED RIB		•					•		
SERIES E30										
FT	FLAT TOP	•	•	•	•			•		
PF	PERFORATED	•	•		•			•		
OG	OPEN GRID	•			•			•		
FG	FLUSH GRID	•	•		•	•		•		
RR	RAISED RIB		•					•		
TF	TRIAN FRICTION	On Request *[page 188]*								
FF	FLAT FRICTION									
SR	SLIDING ROLLERS									
SERIES E31										
LT	LATERAL TRANSFER							•		
SERIES E32										
FT	FLAT TOP - 82,5 mm							•		
FT	FLAT TOP - 114,3 mm							•		
FT	FLAT TOP - 152,4 mm							•		
FT	FLAT TOP - 190,5 mm							•		

Materials: [PP] Polypropylene - [PE] Polyethylene - [AC] Polyacetal - [PPE] Electrically Conductive Polypropylene

Colours: [W] White - [G] Grey - [B] Blue - [N] Natural - [O] Black

The materials and colours that are normally in stock are those above indicated. In special cases in which it is needed a belt in a material or colour different from those above mentioned, you should ask directly to EUROBELT.

TABLE OF MATERIALS AND COLOURS IN STOCK

TYPE		PP			PE		AC			PPE
		W	G	B	N	B	W	B	N	O
SERIE E40										
FT	FLAT TOP	•	•		•			•		
FG	FLUSH GRID	•	•		•			•		
NS	NON SLIP									•
SR	SLIDING ROLLERS	On Request *[page 188]*								
SERIE E41										
RR	RAISED RIB		•							
SERIE E50										
FT	FLAT TOP	•	•		•	•				
PF	PERFORATED	•	•		•					
FG	FLUSH GRID	•	•		•	•				
OG	OPEN GRID	•		•	•	•				
OH	OPEN GRID HIGH	•		•	•	•				
KN	KNURLED	•	•					•		
CO	CONIC	•	•		•			•		
TF	TRIAN FRICTION	On Request *[page 188]*								
CF	CONIC FRICTION									
SR	SLIDING ROLLERS									
SERIE B50										
FT	FLAT TOP	•		•	•	•	•			
PF	PERFORATED	•		•	•	•	•			
FG	FLUSH GRID	•		•	•	•	•			
SERIE E80										
FT	FLAT TOP	•	•	•	•			•	•	
PF	PERFORATED	•	•		•			•	•	
SERIE E93										
SL	FLUSH GRID - Without Edge Tab	•	•		•			•	•	
CL	FLUSH GRID - With Edge Tab	•	•		•			•	•	
CO	CONIC	•	•		•			•	•	
CF	CONIC FRICTION	On Request *[page 188]*								
SR	SLIDING ROLLERS									

Materials: [PP] Polypropylene - [PE] Polyethylene - [AC] Polyacetal - [PPE] Electrically Conductive Polypropylene

Colours: [W] White - [G] Grey - [B] Blue - [N] Natural - [O] Black

The materials and colours that are normally in stock are those above indicated. In special cases in which it is needed a belt in a material or colour different from those above mentioned, you should ask directly to EUROBELT.

MATERIALS AND COLOURS - FRICTION TOP BELTS

TYPE		RUBBER		PP			PE	
		HARDNESS	COLOURS	W	G	B	N	B
SERIES E20								
TF	TRIAN FRICTION	A60	BEIGE	•	•		•	
SERIES E30								
TF	TRIAN FRICTION	A35	GREY	•				
		A45	BLACK		•			
		A60	BEIGE	•			•	
FF	FLAT FRICTION	A35	GREY	•				
		A45	BLACK		•			
		A60	BEIGE	•			•	
SERIES E50								
TF	TRIAN FRICTION	A60	BEIGE	•	•		•	•
CF	CONIC FRICTION			•	•		•	•
SERIES E93								
CF	CONIC FRICTION - Without Edge Tab	A60	BEIGE	•	•		•	
	CONIC FRICTION - With Edge Tab			•	•		•	

Materials:
[PP] Polypropylene
[PE] Polyethylene

Colours:
[W] White
[G] Grey
[B] Blue
[N] Natural

The materials and colours that are normally in stock are those above indicated. In special cases in which it is needed a belt in a material or colour different from those above mentioned, you should ask directly to EUROBELT.

MATERIALS AND COLOURS - SLIDING ROLLERS BELTS

TYPE		DIAMETER ROLLER	PP			PE		AC		
			W	G	B	N	B	W	B	N
SERIES E20										
FG	FLUSH GRID	Ø 15 MM	•	•	•	•	•		•	
SERIES E30										
FG	FLUSH GRID	Ø 15 MM	•	•	•	•			•	
SERIES E40										
FG	FLUSH GRID	Ø 25 MM	•	•		•			•	
SERIES E50										
FG	FLUSH GRID	Ø 25 MM	•	•		•	•			
OG	OPEN GRID		•	•		•	•			
SERIES E93										
FG	FLUSH GRID - Without Edge Tab	Ø 20 MM	•	•		•			•	•
	FLUSH GRID - With Edge Tab		•	•		•			•	•

Materials:
[PP] Polypropylene
[PE] Polyethylene
[AC] Polyacetal

Colours:
[W] White
[G] Grey
[B] Blue
[N] Natural

The materials and colours that are normally in stock are those above indicated. In special cases in which it is needed a belt in a material or colour different from those above mentioned, you should ask directly to EUROBELT.

EFFECTS CAUSED BY THE TEMPERATURE

DIMENSIONAL VARIATIONS IN THE BELT

The plastic materials undergo dimensional variations, expansions or contractions, when they are exposed to temperature changes with regard to a room temperature of 21º C.

These dimensional variations must be taken into consideration when designing and building the conveyor for its proper functioning.

Therefore the conveyor will have to be designed so that it allows to absorb the longitudinal variations in the return way and the width variations in the frame sides.

In order to calculate the expansions or contractions both of the belt and the wearstrips, the formulae below will be applied:

VARIATION IN THE BELT LENGTH:

$$\Delta = L.Initial \times (T.Final - T.Initial) \times \alpha$$

Δ (mm) :	Dimensional variation in the belt length. - A positive value shows an expansion. - A negative value shows a contraction.
L.Initial (mtr.):	Belt length at the initial temperature.
T.Final (ºC):	Final temperature of the application.
T.Initial (ºC):	Initial temperature of the application.
α (mm/mtr/ºC):	Thermic expansion coefficient.

VARIATION IN THE BELT WIDTH:

$$\Delta = A.Initial \times (T.Final - T.Initial) \times \alpha$$

Δ (mm):	Dimensional variation in the belt width. - A positive value shows an expansion. - A negative value shows a contraction.
A.Initial (mtr.):	Belt width at the initial temperature.
T.Final (ºC):	Final temperature of the application.
T.Initial (ºC):	Initial temperature of the application.
α (mm/mtr/ºC):	Thermic expansion coefficient.

THERMIC EXPANSION COEFFICIENTS

Belts	(mm./m./ºC)	(inch/foot/ºF)
Polypropylene (below 38º C)	0.12	0.0008
Polypropylene (above 38º C)	0.15	0.0010
Polyethylene	0.17	0.0011
Acetal	0.09	0.0006
Wearstrips	**(mm./m./ºC)**	**(inch/foot/ºF)**
HDPE	0.17	0.0011

Example:

Product transport application under the conditions below:

- Belt material: polypropylene (.... according to the table).
- Length: 20 m. (Linitial).
- Width:1 m. at 21º C (A.Initial and T.Initial).
- Final working temperature: 80º C (T.Final).

Applying the above formulae we will obtain:

Length Δ : 20 x (80-21) x 0,15 = 177 mm.

Width Δ : 1 x (80-21) x 0,15 = 8,85 mm.

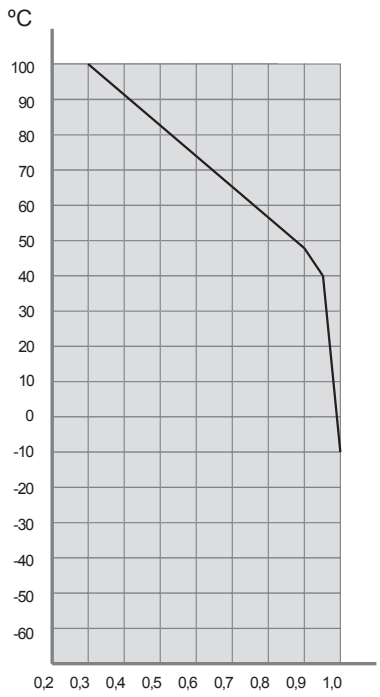
Therefore, whenever we carry out the conveyor design it will have to be taken into consideration that 177 mm must be absorbed by their catenaries in the return way, otherwise by its take up, and 8.85 mm by the conveyor sides for its proper functioning.

VARIATIONS IN THE MECHANICAL PROPERTIES OF THE BELT

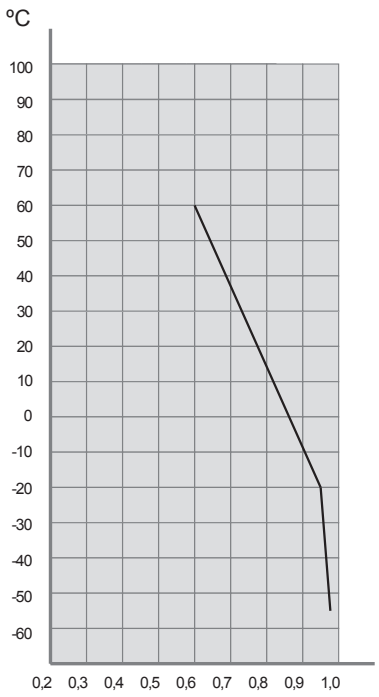
All plastic materials undergo changes in their properties when they are subject to temperature variations.

These variations determine a Temperature Factor (CT) that has an influence on the belt resistance and that must be taken into consideration when making the feasibility calculations of the application and when choosing the most appropriate belt and material.

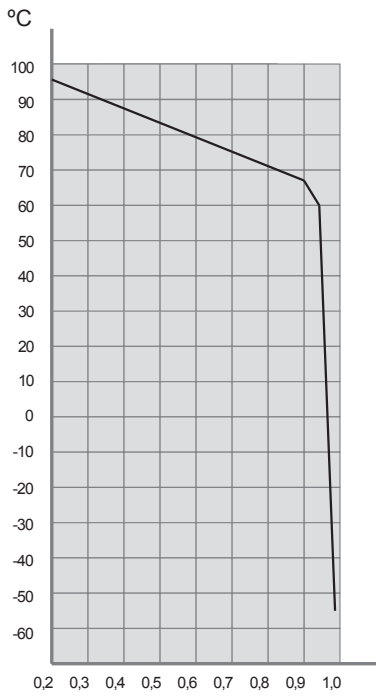
POLYPROPYLENE



POLYETHYLENE



POLYACETAL



It can be observed in the above graphics that:

↑	Increase in working temperature	=	Lower temperature factor	›	Least belt resistance
↓	Decrease in working temperature	=	Higher temperature factor	›	Greater belt resistance

Likewise it will have to be taken into consideration that the lower the temperature is, the more brittle the belt surface is, which is important in applications with impacts.

EFFECTS CAUSED BY THE FRICTION

FRICTION BETWEEN THE BELT AND THE SUPPORT SURFACES

The belt movement entails a negative strength caused by the friction between the support surfaces of the belt and the belt itself due to the belt weight and that of the product conveyed.

This friction determines a Friction Factor (CF) that must be taken into consideration for calculating the feasibility of the application as well as for the belt choice.

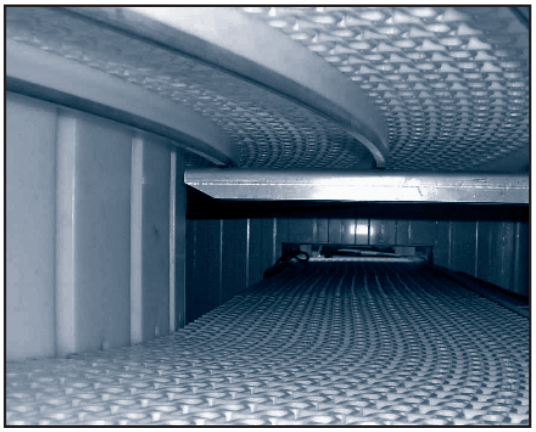
Small values of this factor will imply softer belt movements, less wear, a lower motor power, and a longer useful life of the belt.

The most common values for this Friction Factor are:

FRICTION FACTOR (CF) BETWEEN THE BELT AND THE SUPPORT SURFACE

SUPPORT SURFACE MATERIALS	POLYPROPYLENE				POLYETHYLENE				ACETAL			
	SMOOTH SURFACE		ABRASIVE SURFACE		SMOOTH SURFACE		ABRASIVE SURFACE		SMOOTH SURFACE		ABRASIVE SURFACE	
	HUMID	DRY	HUMID	DRY	HUMID	DRY	HUMID	DRY	HUMID	DRY	HUMID	DRY
U.H.M.W.	0.11	0.13	NR	NR	0.24	0.32	NR	NR	0.10	0.10	NR	NR
H.D.P.E.	0.09	0.11	NR	NR	NR	NR	NR	NR	0.09	0.08	NR	NR
Nylon impregnated with molybdenum or silicone	0.24	0.25	0.29	0.30	0.14	0.13	NR	NR	0.13	0.15	NR	NR
Stainless steel or carbon steel cold rolled	0.26	0.26	0.31	0.31	0.14	0.15	NR	NR	0.18	0.19	NR	NR

[NR] Not recommended



FRICTION BETWEEN THE BELT AND THE TRANSPORTED PRODUCT

In some applications there can be other type of negative forces caused by the friction between the belt contact surface and that of the product which appears when the belt is running and the product stops on its surface. A characteristic example is that of the accumulation tables.

The Factor of Friction by Accumulation (C_{AC}) will have to be taken into account for calculating the feasibility of our application as well as for the belt choice.

As in the previous case, small figures of this Factor will imply softer belt movements, less belt wear and fewer damages on the product surface, a lower motor power, and a longer useful life of the belt.

The most common values of this Factor are:

FRICTION FACTOR BETWEEN THE BELT AND THE PRODUCT (C_{AC})

MATERIAL OF TRANSPORTED PRODUCT	POLYPROPYLENE		POLYETHYLENE		ACETAL	
	HUMID	DRY	HUMID	DRY	HUMID	DRY
GLASS	0.18	0.19	0.08	0.09	0.13	0.14
STAINLESS STEEL	0.26	0.32	0.10	0.13	0.13	0.13
PLASTIC	0.11	0.17	0.08	0.08	0.13	0.16
CARDBOARD	—	0.21	—	0.15	—	0.18
ALUMINIUM	0.40	0.40	0.20	0.24	0.33	0.27

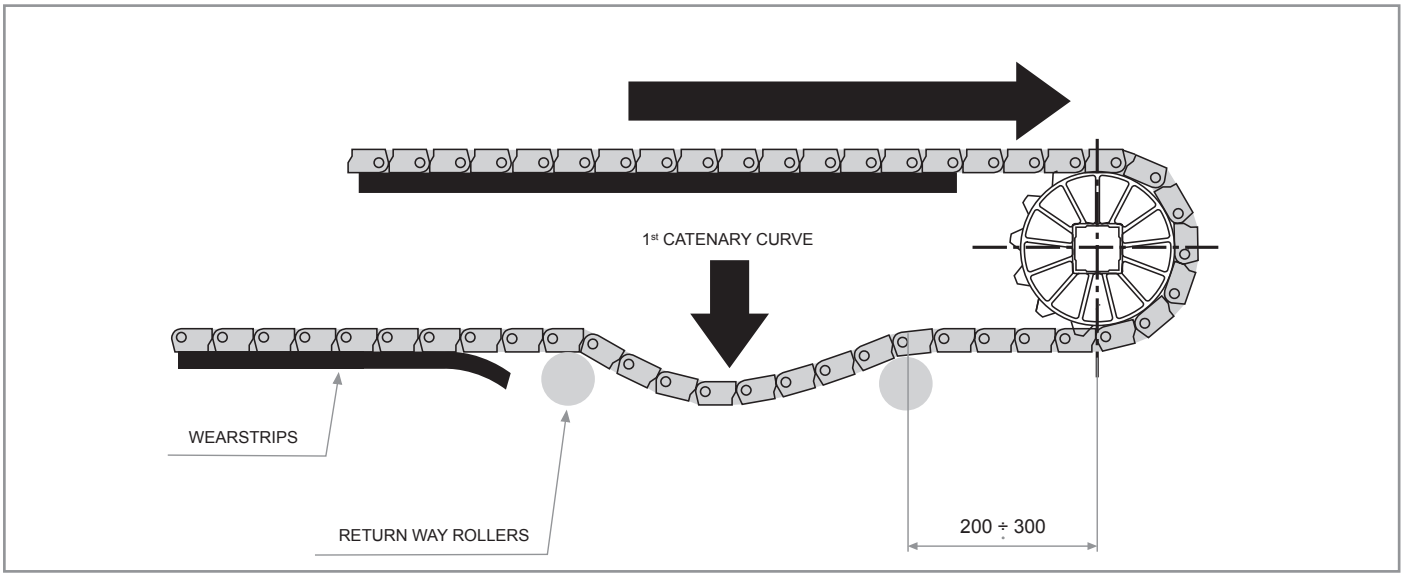
The above friction values are theoretical and can be altered according to other factors like high speed, heavy load, and working conditions, dirty or abrasive environments, etc.

CATENARIES

Unlike other conventional conveyor belt systems, in which it is necessary to apply to the belt a high adherence tension with regard to the transmission drums, in the EUROBELT modular conveyor belt system, with direct and positive traction by means of sprockets, this tension must be the minimum necessary, so that the sprockets get correclty fitted to the belt to work properly.

To achieve this, it is necessary to leave the belt hanging down freely when coming out of the sprockets, once the first support roller has been surpassed, forming a hanging called catenary curve. It will act as a natural take-up, absorbing the changes in length of the belt owing to expansions and contractions. It will apply a tension fixing the belt on the teeth of the sprockets.

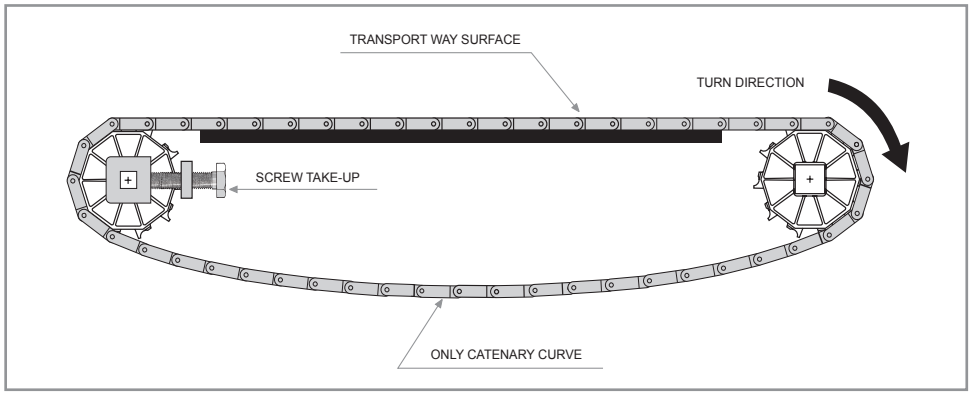
Then the belt can rest on return-way rollers, whose distance will be lesser than that of the first catenary, or on wearstrips.



CONVEYOR UNDER 2 METRES

If the conveyor length is under 2 metres, there will be just one catenary that will hang down freely all along the return way.

In this case it will not be necessary to place any roller in the return way.

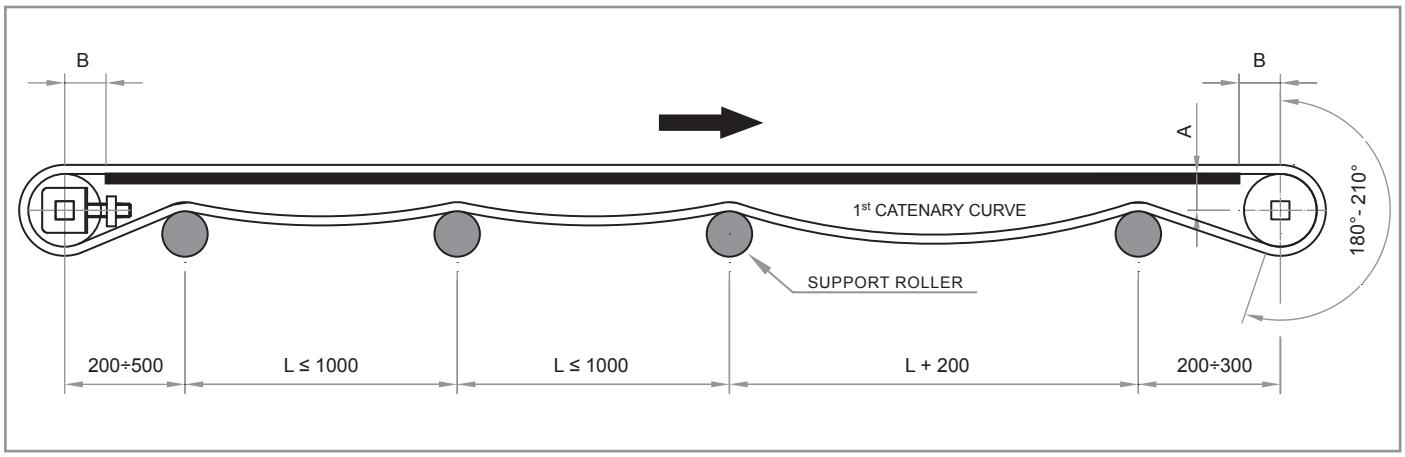


CONVEYOR OVER 2 METRES

For conveyor lengths over 2 metres, support rollers will be placed in the return way in order to create the catenary curves. The distance between the sprocket centre and the first roller should range between 200 and 300 mm for the drive shaft, and between 200 and 500 mm for the idle shaft. The first catenary in the travel direction will be bigger than the rest of catenaries of the conveyor.

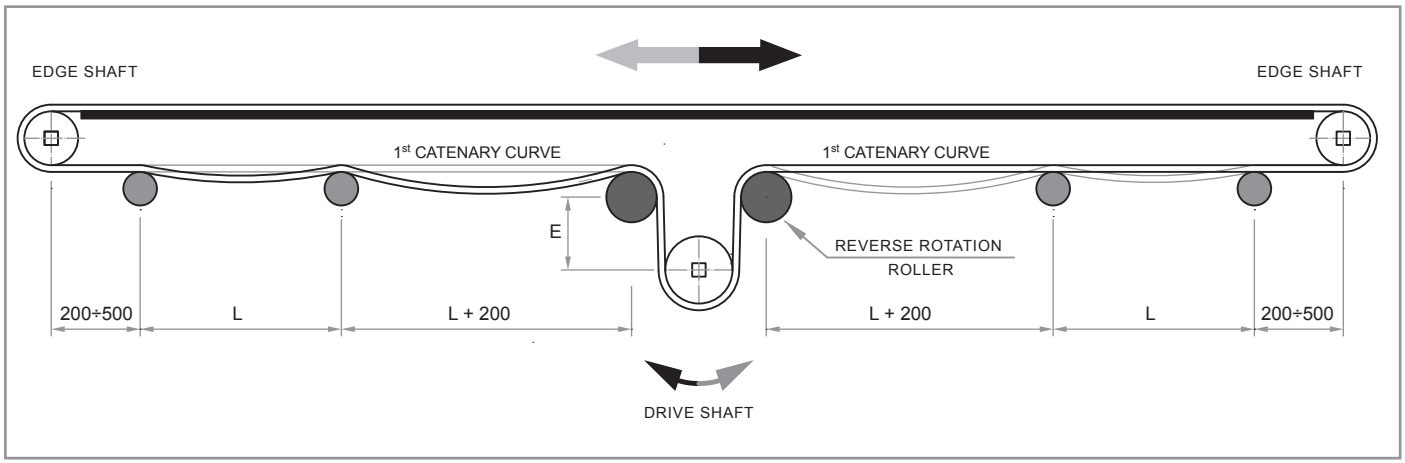
The recommended diameter for the support rollers is 50 mm for the belts with a pitch up to 30 mm, and 100 mm for the belts with a bigger pitch.

For applications with heavy loads or needing to reduce the conveyor dimensions due to lack of space, the support rollers will be raised for allowing the belt to roll round the sprocket between 180º and 210º.



Refer to dimensions A and B in page 192.

BIDIRECTIONAL CONVEYOR



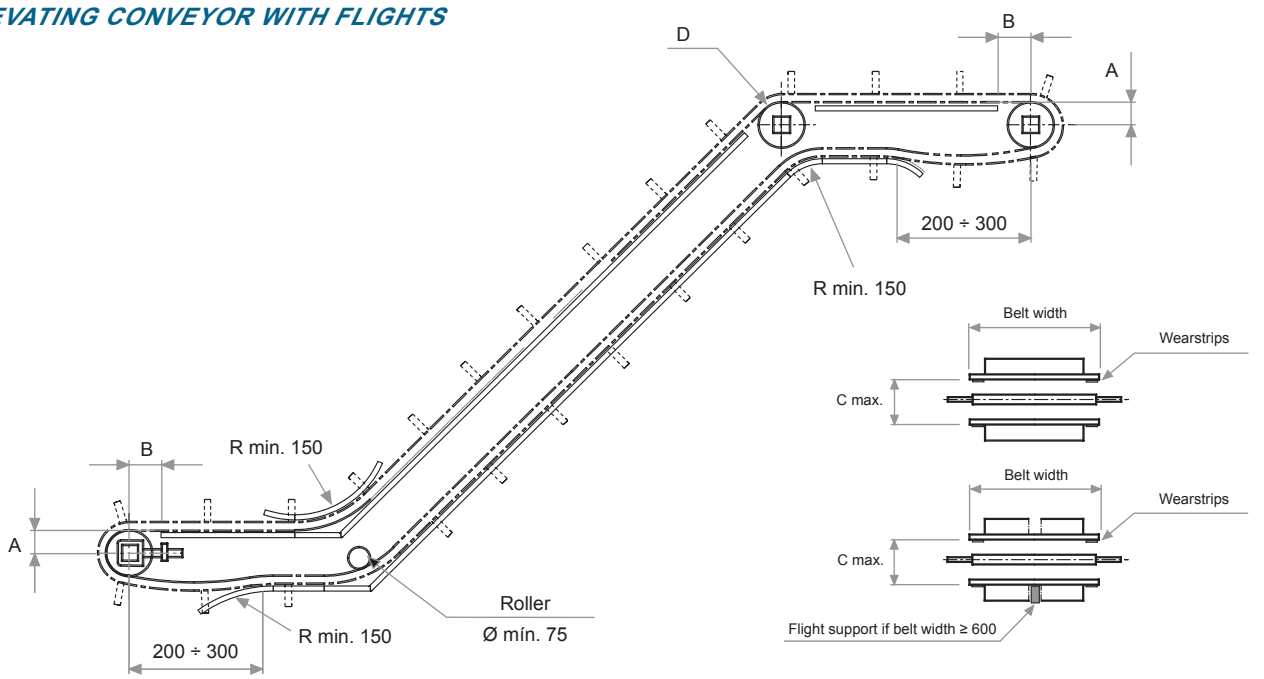
For bidirectional conveyors, the drive shaft is placed in the centre of the return way at a distance (E) which should be at least the triple of the belt pitch with regard to the reverse-rotation rollers. These rollers must have a bigger diameter than the support rollers, 100 mm for the belts with a pitch up to 30 mm, and 150 mm for the belts with a bigger pitch.

The first catenary at every side of the drive shaft will be bigger than the rest of catenaries.

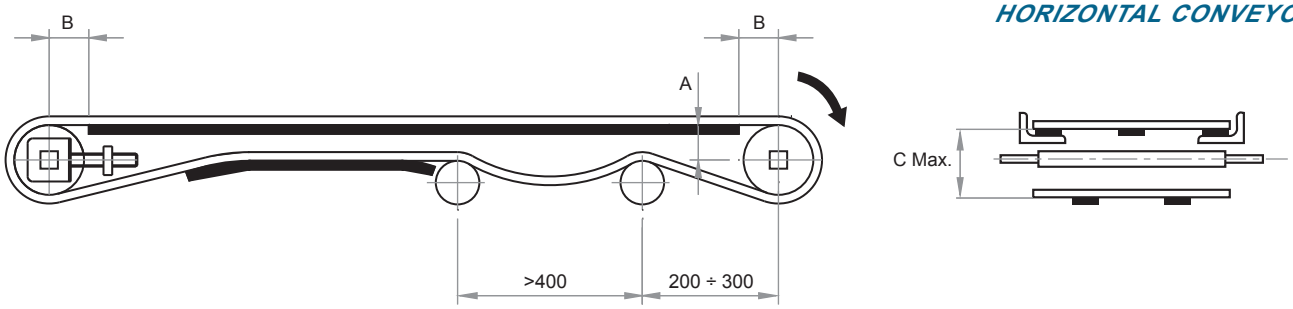
[Dimensions in mm]

CONSTRUCTION DATA [CONVEYOR]

ELEVATING CONVEYOR WITH FLIGHTS



HORIZONTAL CONVEYOR



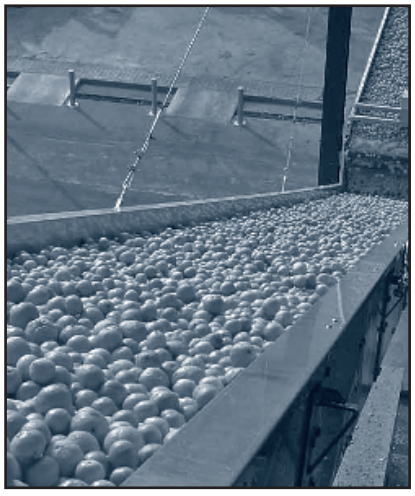
[A] Distance between the sliding surface of the belt and the centre of the shaft.

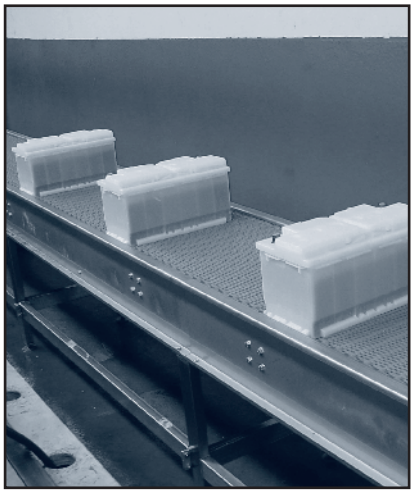
[B] Distance between the vertical of the shaft and the beginning of the sliding surface.

[C] Distance between the sliding surface of the belt and the support of the return way.

[D] If sprockets are used in the inflexion shaft, do not retain the central one.

[R] This radius must be as big as allowed by the application in order to minimize the wear (min. 150 mm). For belts with side guards, consult about this radius.





[Dimensions in mm]

In the construction of conveyors, the distances appearing in the chart below must be respected according to the belt Series and the size of the sprockets.

Nº of teeth T	Ø Pitch	A	B max.	C max.
SERIES C12				
11	42.59	16	22	41
20	76.7	34	35	77
26	99.55	45	40	99
31	118.61	55	45	119
40	152.94	72	52	153
SERIES E20				
8	52.2	20	28	65
16	102.5	46	50	110
24	153.5	72	65	155
SERIES A24				
7	55.31	22	25	55
13	100.25	46	40	100
20	153.41	72	50	155
25	191.48	91	60	195
SERIES E30 - E31 - E32				
6	60	25	30	65
9	87.7	37	40	92
11	106.5	48	50	110
16	153.5	73	65	155
20	191.5	91	75	195
SERIES E40 - E41				
8	104.5	43	45	105
10	129.4	56	55	130
13	167.1	75	70	165
13D	167.1	75	70	165
16	205	94	80	205
20	255.7	120	90	255

Nº of teeth T	Ø Pitch	A	B max.	C max.
SERIES E50				
6	100	42	55	105
8	130.65	58	60	135
10	161.80	72	76	165
16	256.29	120	80	260
SERIES B50				
6	100	42	55	105
8	130.65	58	60	135
10	161.80	72	76	165
12	193.18	89	78	200
16	256.29	120	80	260
SERIES E80				
8	130.65	58	60	135
10	161.8	72	76	165
12	193.18	89	78	200
16	256.29	120	80	260
SERIES E93				
11	106.48	44	50	115
16	153.77	69	65	160
20	191.77	87	75	200

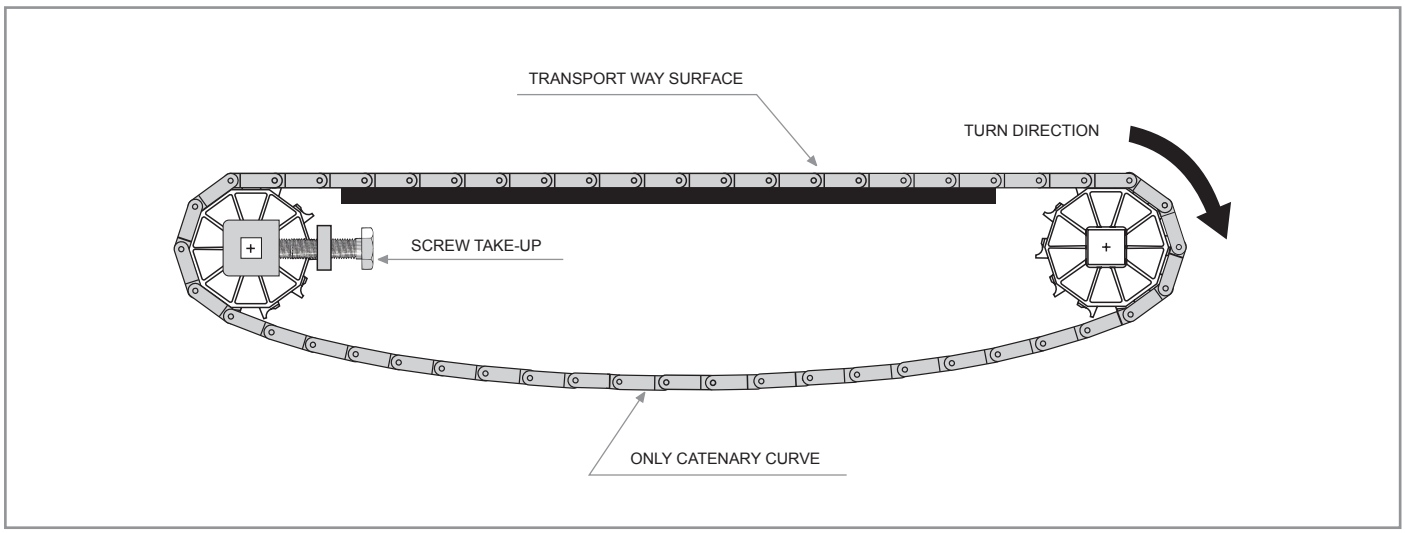
[Dimensions in mm]

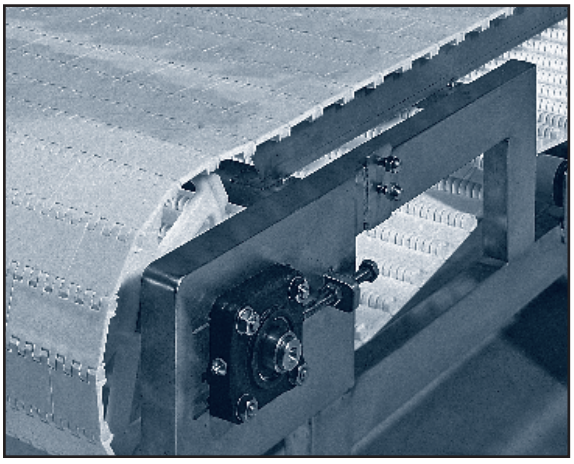
TAKEUPS

As shown in the previous chapter, catenary curves act as dynamic gravity takeups that in many cases can provide enough tension of adherence, so that the sprockets do not slide beneath the belt and can pull it properly.

In many cases, these curves do not provide that tension, being necessary the placement of other type of takeups.

SCREW TAKE-UP





This kind of takeups consists of a a shaft displacement system, normally the idle shaft, that modifies the real belt length and adapt it to the possible changes occurred because of expasions-contractions, losses of tension, etc.

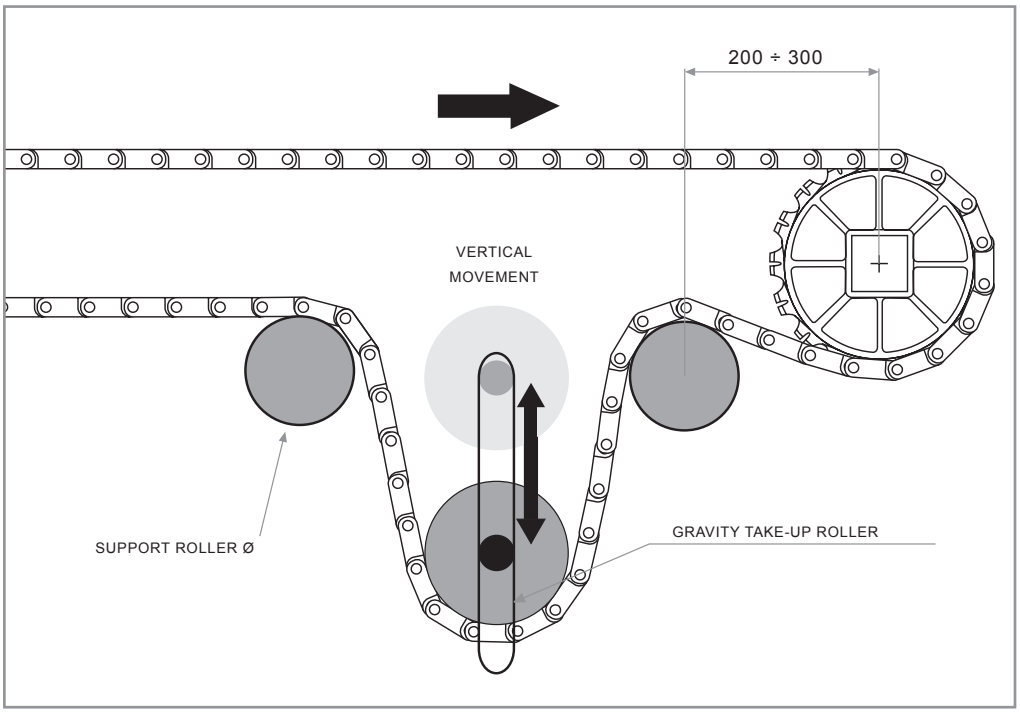
To carry out this displacement, the bearing journals are put on some slots in the structure of the conveyor, making the fastening by means of regulating screws.

When acting on them, the desired displacement is carried out.

Usually these takeups are valid to position the catenary curve, and not as a system to control the changes in the belt length. This type of take-up is suitable to make easy the assembly and dismantling of the belt, as well as to control and regulate the sag of the catenaries.

These screw takeups usually will be accompanied usually by other type of complementary take-up, depending on the characteristics of the application.

GRAVITY TAKE-UP BY SLIDE



These are takeups consisting of a roller with a determined weight that leans on the return way of the belt, supplying enough tension to the sprockets, so that they can perform a proper traction.

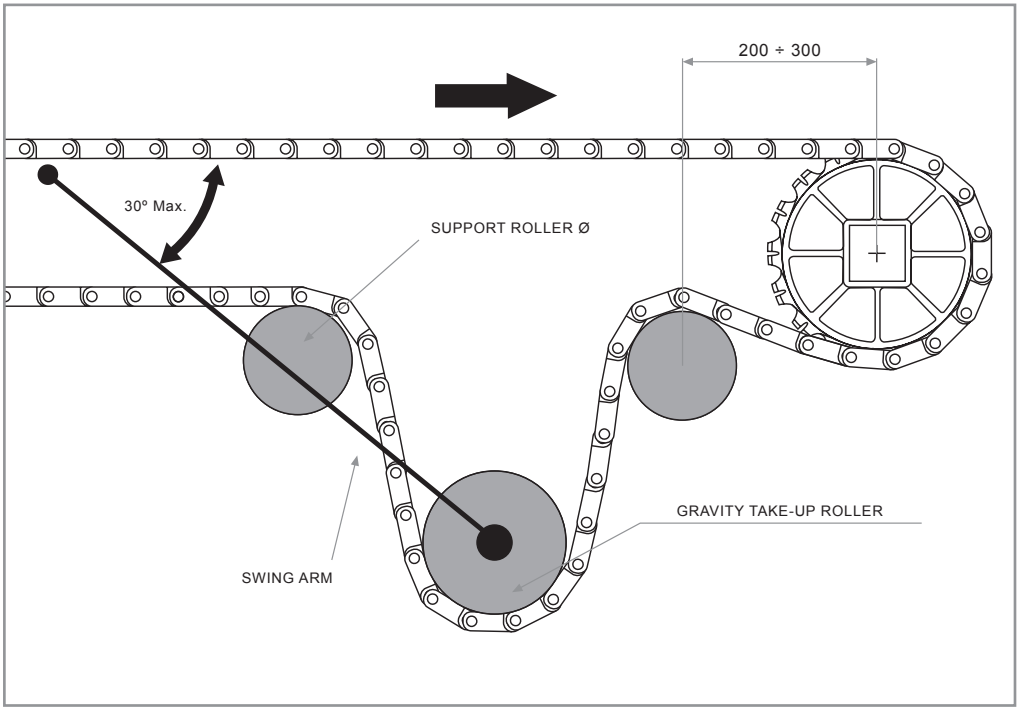
SERIES
C12 / E20 / A24 / E30

Diameter (mm)	Weight (kg per m. of belt width)
Ø 100	20 kg

SERIES
E40 / E41 / E50 / B50 / E80 / E93

Diameter (mm)	Weight (kg per m. of belt width)
Ø 150	40 kg

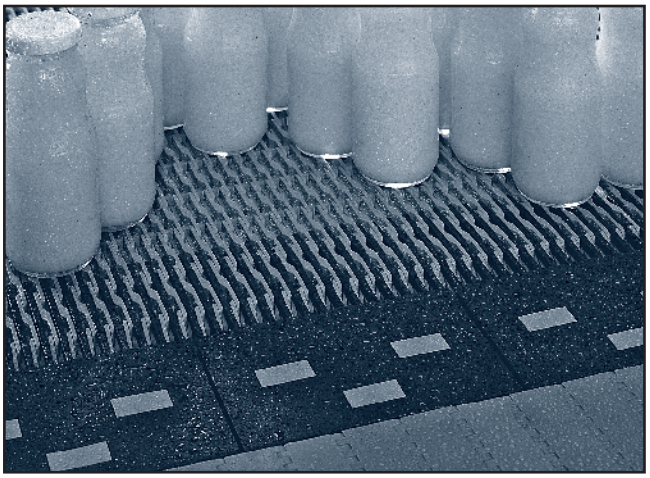
GRAVITY TAKE-UP BY SWING ARM

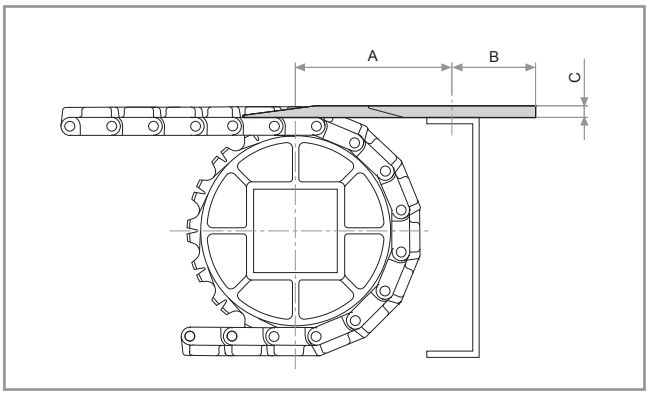


[Dimensions in mm]

TRANSFERENCES

WITH FINGER PLATE





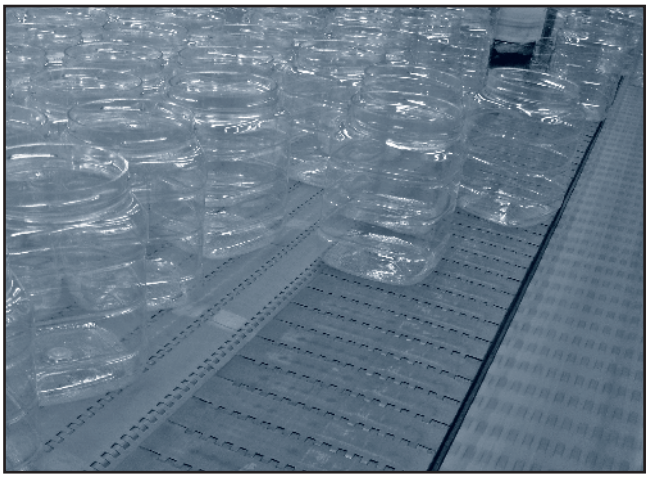
SERIES	A	B	C
E20	75	40	5.5
A24 - E30 - E41	90	50	5.5

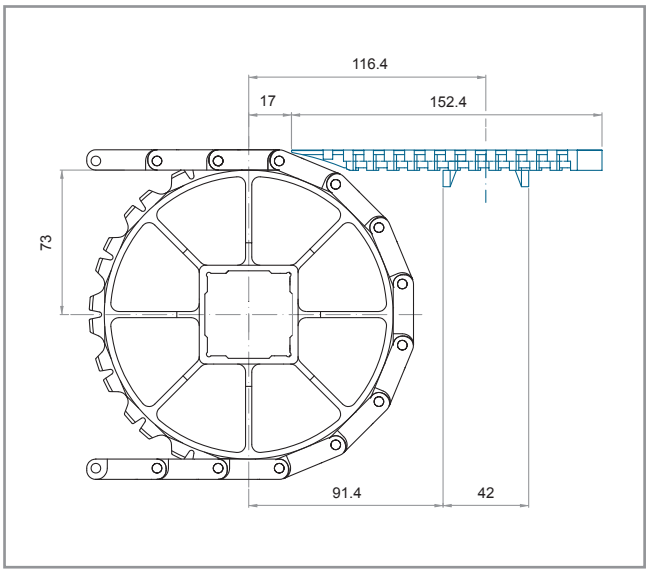
The EUROBELT finger plates are used with the Raised Rib type of Series E20, Series A24, Series E30 and Series E41. The transference can be done in the same direction or at 90 degrees, and it is carried out by the own push of the containers among themselves.

The transference is performed in a tangential way, both in the belt that delivers the containers and in the belt that receives them, avoiding the stumbling of the product with the edges of transference plates, also called dead plates, as well as the possibility of falls by overturning.

It is the ideal transference system for big accumulation tables, palletisers or depalletisers, pasteurisers and intersections of transport lines.

WITH BELT





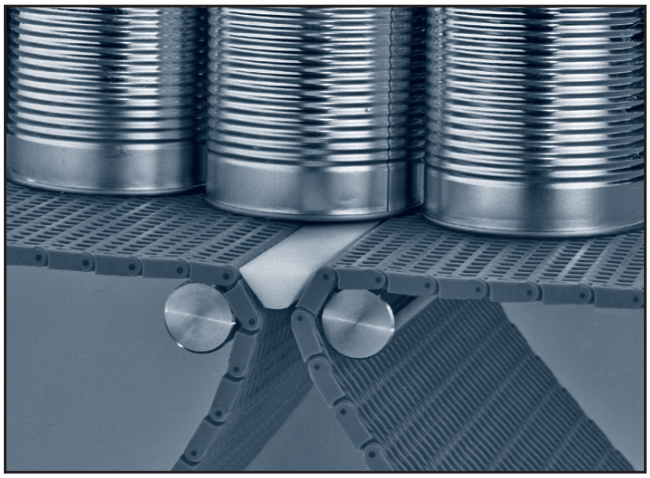
Using the Series E31 Lateral-Transfer Flat Top, dynamic and smooth lateral transferences can be carried out with no need of finger plates.

With one of its edges bevelled we manage to bring nearer the belts taking part in the transference, whereas the lower guides keep the belt aligned.

It has been designed for those applications in which we want to avoid the retention of containers in the transference area as well as to achieve more efficiency in their movement.

[Dimensions in mm]

WITH DEAD PLATE



In applications in which the containers have little stability, the transference area can be covered with a small dead plate made of a material of a low coefficient of friction.

It is placed in transferences to be made in the same direction, and it is recommended to be combined with belts of having a small pitch like Series C12, Series E20, Series A24 or Series E30, and turn diameters as small as possible in order to reduce the length of the dead plate.

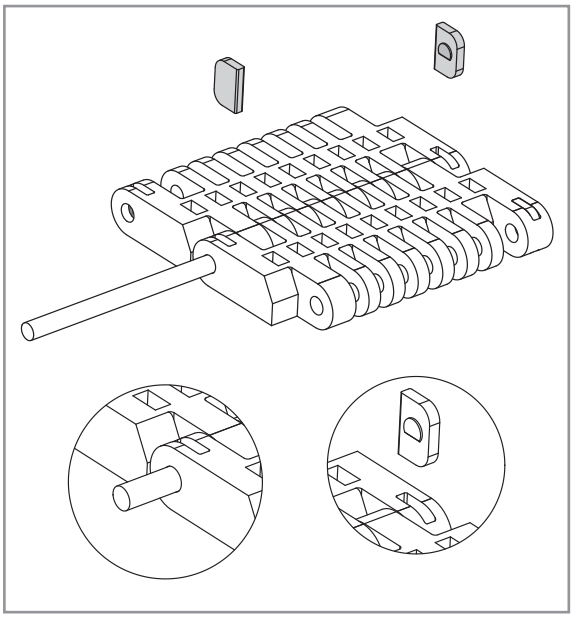
WITH ROLLERS

When the containers to be conveyed have a considerable dimension and a good stability, the transference area uses to be covered with free or motorised rollers.

This system is suitable both for transferences in the same direction and for those performed at 90 degrees.

It can be carried out with any of our belts.

INSTRUCTIONS



ASSEMBLY

Eurobelt belts are made of modules which are joined by means of joint rods and which constitute their transport area.

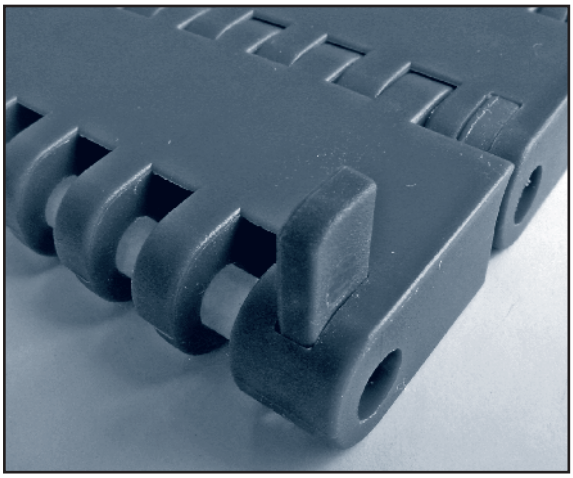
Their modular configuration allows us to manufacture a made-to-measure belt for you.

We will introduce the rod in the hole existing across every module to join the different lines of modules that make up the belt.

The fastening of the rods is carried out by means of extractable caps.

These caps will be inserted into the lodgings existing for that purpose in the end modules.

Finally, in order to make easier the positioning of the belt on the conveyor, both ends of the belt will be joined at the top of the conveyor.



DISMANTLING CAP

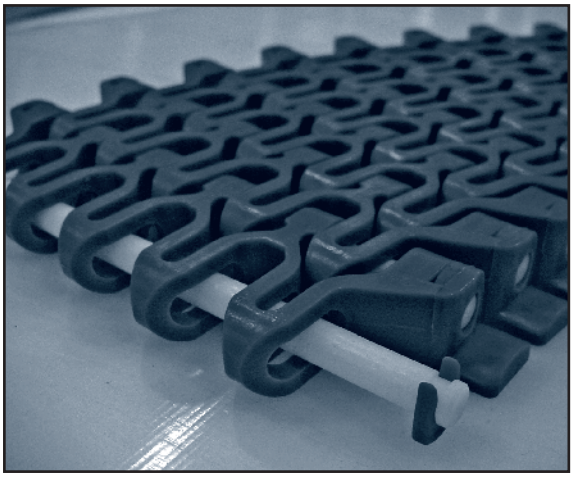
A. Lean the belt on a smooth area, leaving a free space underneath the line we are going to replace to allow the cap to get out.

B. Now we will pull out the caps placed at both ends, always from the top to the bottom.

C. We will push the rods until releasing the damaged module.

D. We will replace the damaged module and will introduce the rods.

E. Insert the caps, always from the top to the bottom.



DISMANTLING CLIP

A. Leave a free space underneath the ends of the line to pull out the clips, always from the bottom to the top.

B. Push the rods until releasing the damaged module.

C. Replace the damaged module and introduce the rods.

D. Insert the clips, always from the top to the bottom.

MAINTENANCE

One of the most important characteristics of the plastic modular belt is the low maintenance cost. With a minimal expenditure in preventive maintenance, the belt can work uninterruptedly until the wear of the material itself, due to the friction with the fixed portions of the conveyor, advises its replacement in order to avoid unexpected stops.

In case of accident (tear or breakage) the repair will just take some minutes, the necessary time for replacing the damaged modules with no need of any specific tool..

The maintenance works must be done by qualified personnel and always according to the valid legislation regarding Job Security.

Before installing and putting into operation the machine, all the checking and general maintenance instructions given by the manufacturer of the conveyor must be read carefully.

It is important to carry out a constant maintenance and/or cleaning of the machine, particularly in those areas in direct contact with the product.

First of all the machine will be switched off to avoid the risk of electric shock. Make sure the general switch is in the off position and the emergency stop of the machine is pressed.

For cleaning our plastic modular belts use water and gel, and rinse with water and disinfectant.

Before applying any gel or disinfectant to the belt, the label of the container should be read carefully to check the composition.

In order not to damage the belt, it is essential the composition of the gel and that of the disinfectant to be very low in chlorine. Any cutting element will never be used for the cleaning of the belt as it can cause its deterioration.

CHEMICAL RESISTANCE

CHEMICAL NAME	PP		PE		AC	
	20 °C	60 °C	20 °C	60 °C	20 °C	60 °C
Acetic acid	V	V	V	Q	-	-
Acetic acid (5%)	V	V	V	V	V	-
Acetone	V	V	V	V	Q	Q
Alcohol (all types)	V	V	V	V	-	-
Aluminium compounds	V	V	V	V	-	-
Alums (all types)	V	V	V	V	-	-
Ammonia	V	V	V	V	-	-
Ammonium compounds	V	V	V	V	-	-
Amyl acetate	Q	NV	Q	NV	-	-
Amyl chloride	NV	NV	Q	NV	-	-
Aniline	V	V	V	NV	-	Q
Aqua regia	NV	NV	Q	NV	-	-
Arsenic acid	V	V	V	V	-	-
Barium compounds	V	V	V	V	-	-
Barium soap fat	V	Q	-	-	-	-
Beer	V	V	V	V	-	-
Benzene	Q	NV	Q	NV	V	Q
Benzene sulphonic acid (10%)	V	V	V	V	-	-
Benzoic acid	V	V	V	V	-	-
Borax	V	V	V	V	-	-
Boric acid	V	V	V	V	-	-
Brake fluid	V	V	-	-	V	V
Brine (10%)	V	V	V	V	V	V
Bromic acid	NV	NV	NV	NV	-	-
Bromine, liquid or vapour	NV	NV	NV	NV	-	-
Bromine water	NV	NV	-	-	-	-
Butyl acetate	NV	NV	Q	NV	-	-
Butyl acid	NV	NV	V	Q	-	-
Butyric acid	V	-	V	Q	-	-
Calcium compounds	V	V	V	V	-	-
Calcium soap fat	V	Q	-	-	-	-
Calgonite (0,3%)	V	V	-	-	V	V
Carbon dioxide	V	V	V	V	-	-
Carbon disulphide	Q	NV	Q	NV	-	-
Carbon tetracloride	NV	NV	NV	NV	V	Q

This chemical resistance guide is merely informative and it is based on specifications given by the suppliers of the technical plastics employed in our manufacturing process.

Materials:
[PP] Polypropylene
[PE] Polyethylene
[AC] Polyacetal

[V] Valid
[NV] Not Valid
[Q] Questionable
[-] No Information

CHEMICAL RESISTANCE

CHEMICAL NAME	PP		PE		AC	
	20 °C	60 °C	20 °C	60 °C	20 °C	60 °C
Cellosolve TM	V	V	-	-	-	-
Chloracetic acid	V	V	-	-	-	-
Chlorine-gas	NV	NV	Q	NV	NV	NV
Chlorine water (0,4% Cl)	V	Q	-	-	NV	NV
Chlorobenzene	NV	NV	Q	NV	-	-
Chloroform	NV	NV	NV	NV	-	-
Chlorosulphonic acid	NV	NV	NV	NV	-	-
Chlorox	NV	V	Q	-	-	NV
Chromic acid (50%)	V	V	V	Q	-	-
Citric acid	V	V	V	V	-	-
Citric acid (10%)	V	V	V	V	V	-
Citrics juice	V	V	V	V	-	-
Clorine liquid	NV	NV	NV	NV	NV	NV
Coconut oil	V	V	V	V	-	-
Copper compounds	V	V	V	V	-	-
Corn oil	V	V	V	V	-	-
Cottonseed oil	V	V	V	V	-	-
Cresol	V	V	V	Q	-	-
Cyclohexane	V	Q	NV	NV	-	-
Cyclohexanone	V	Q	NV	NV	-	-
Detergents	V	V	V	V	V	V
Dextrine	V	V	V	V	-	-
Di-iso-octyl phthalate	V	V	-	-	-	-
Dibutyl phthalate	V	Q	-	-	-	-
Diethanolamine	V	V	-	NV	-	-
Diethyl ether	NV	NV	NV	NV	Q	Q
Diglycolic acid (30%)	V	V	V	V	-	-
Dimethyl phthalate	V	V	-	-	-	-
Dimethylamine	V	-	-	-	-	-
Dioctyl phthalate	V	Q	-	-	-	-
Ethyl acetate	V	V	Q	Q	Q	NV
Ethyl ether	Q	Q	-	-	-	-
Ethylamine	V	V	-	-	-	-
Ethylene chloride	NV	NV	-	-	-	-
Ethylene glicol (50%)	V	V	V	V	V	Q

This chemical resistance guide is merely informative and it is based on specifications given by the suppliers of the technical plastics employed in our manufacturing process.

Materials:
[PP] Polypropylene
[PE] Polyethylene
[AC] Polyacetal

[V] Valid
[NV] Not Valid
[Q] Questionable
[-] No Information

CHEMICAL RESISTANCE

CHEMICAL NAME	PP		PE		AC	
	20 °C	60 °C	20 °C	60 °C	20 °C	60 °C
Ferric/ferrous compounds	V	V	V	V	-	-
Formaldehyde (37%)	V	V	V	Q	-	-
Formic acid (85%)	V	Q	V	V	-	-
Freon	-	-	V	V	Q	Q
Fuel oil	V	Q	V	NV	Q	Q
Furfural	NV	NV	Q	NV	-	-
Glucose	V	V	V	V	-	-
Glycerol	V	V	-	-	-	-
Grease	V	V	V	Q	-	-
Heptane	NV	NV	Q	NV	V	V
Hexane	V	Q	NV	NV	-	-
Hydriodic acid	NV	NV	-	-	-	-
Hydrobromic acid (50%)	V	V	V	V	-	-
Hydrochloric acid	V	V	V	V	NV	NV
Hydrochloric acid (10%)	V	V	V	V	NV	NV
Hydrofluoric acid (35%)	V	V	V	V	NV	NV
Hydrogen peroxide (3%)	V	V	V	V	V	V
Hydrogen peroxide (90%)	Q	Q	V	Q	-	-
Hydrogen sulphide	V	V	V	V	-	-
Igepal (50%)	V	V	-	-	V	Q
Iodine-glasses	V	V	Q	Q	-	-
Isooctane	NV	NV	V	-	-	-
Kerosine	Q	NV	Q	Q	V	V
Lactic acid	V	V	V	V	-	-
Lanolin	V	Q	V	V	-	-
Lard	-	-	V	V	-	-
Lauric acid	V	V	V	V	-	-
Lead acetate	V	V	V	V	-	-
Ligroine	Q	NV	-	-	-	-
Lime sulfur	V	-	-	-	-	-
Linseed oil	V	V	V	V	V	V
Lubricating oil	V	Q	-	-	V	V
Magnesium compounds	V	V	V	V	-	-
Malic acid (50%)	V	V	V	V	-	-
Manganese sulphate	V	-	V	V	-	-

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CHEMICAL RESISTANCE

CHEMICAL NAME	PP		PE		AC	
	20 °C	60 °C	20 °C	60 °C	20 °C	60 °C
Margarine	V	V	V	V	-	-
Mercury	V	V	V	V	-	-
Mercury compounds	V	V	V	V	-	-
Methyl cellosolve	V	-	-	-	-	-
Methyl chloride	NV	NV	-	-	-	-
Methyl ethyl kesone	V	Q	NV	NV	-	-
Methyl sulphuric acid	V	V	V	V	-	-
Methylene chloride	Q	NV	NV	NV	-	-
Mineral oil	Q	NV	V	NV	V	V
Mineral alcohols	Q	NV	-	-	-	-
Molasses	V	V	V	V	-	-
Motor oil	V	Q	-	-	V	V
Naphtha	V	Q	Q	NV	-	-
Nickel compounds	V	V	V	V	-	-
Nitric acid (30%)	V	Q	V	V	NV	NV
Nitric acid (50%)	Q	NV	V	Q	NV	NV
Nitric acid (fuming)	NV	NV	NV	NV	NV	NV
Nitrobenzene	V	Q	NV	NV	-	-
Nitrous acids	Q	NV	-	-	-	-
Nitrous oxide	V	-	-	-	-	-
Oil for transformers	V	Q	V	Q	-	-
Oleic acid	V	NV	-	-	V	V
Olive oil	V	V	V	V	-	-
Oxalic acid	V	V	V	V	-	-
Oxygen	NV	NV	-	-	-	-
Ozone	NV	NV	Q	NV	-	-
Palmitic acid (70%)	V	V	V	V	-	-
Perchloric acid (20%)	V	V	V	V	-	-
Perchloroethylene	NV	NV	NV	NV	-	-
Petrol	Q	NV	V	NV	V	V
Phenol (5%)	V	V	V	V	NV	NV
Phenol	V	V	V	V	NV	NV
Phosphoric acid (30%)	V	V	V	V	-	-
Phosphoric acid (85%)	V	V	V	V	-	-
Photographic solutions	V	V	V	V	-	-

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CHEMICAL NAME	PP		PE		AC	
	20 °C	60 °C	20 °C	60 °C	20 °C	60 °C
Phthalic acid (50%)	V	V	V	V	-	-
Plating solutions	V	V	V	V	-	-
Potassium compounds	V	V	V	V	-	-
Potassium iodide 3% iodine	V	V	V	V	-	-
Potassium hydroxide	V	V	V	V	-	-
Potassium permanganate	V	Q	V	V	-	-
Silver cyanide	V	V	-	-	-	-
Silver nitrate	V	V	V	V	-	-
Sodium chlorite	V	Q	V	V	-	-
Sodium compounds	V	V	V	V	-	-
Sodium hydroxide	V	V	V	V	-	-
Sodium hydroxide (60%)	V	V	V	V	V	V
Sodium hypochlorite (5% Cl.)	V	Q	-	-	NV	NV
Stannic chloride	V	V	V	V	-	-
Stannous chloride	V	V	V	V	-	-
Stearic acid	V	Q	V	V	-	-
Succinic acid	V	V	V	V	-	-
Sugar	V	V	V	V	-	-
Sulphamic acid (20%)	V	V	-	-	NV	NV
Sulphite solutions	V	V	-	-	-	-
Sulphur	V	V	V	V	-	-
Sulphur bioxide	V	V	V	V	-	-
Sulphur chloride	V	-	-	-	-	-
Sulphuric acid (3%)	V	V	V	V	V	V
Sulphuric acid (50%)	V	V	V	V	NV	NV
Sulphuric acid (70%)	V	Q	V	Q	NV	NV
Sulphuric acid (fumming)	NV	NV	NV	NV	NV	NV
Sulphurous acid	V	-	V	V	-	-
Tannic acid (10%)	V	V	V	V	-	-
Tartaric acid	V	V	V	V	-	-
Tetrahydrofurane	Q	NV	-	-	-	-
Toluene	NV	NV	NV	NV	Q	NV
Tomato juice	V	V	V	V	-	-
Tributylic phosphate	V	Q	-	-	-	-
Trichloroacetic acid	V	V	-	-	-	-

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CHEMICAL NAME	PP		PE		AC	
	20 °C	60 °C	20 °C	60 °C	20 °C	60 °C
Trichloroethylene	NV	NV	NV	NV	-	-
Tricresylic phosphate	V	Q	-	-	-	-
Trisodium phosphate	V	V	V	V	-	-
Turbosine	Q	NV	Q	Q	V	V
Turpentine	Q	NV	Q	NV	-	-
Urea	V	V	V	V	-	-
Vinegar	V	V	V	V	-	-
Wine	V	V	V	V	-	-
Xylene	NV	NV	NV	NV	-	-
Zinc compounds	V	V	V	V	-	-

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